

AMERICAN BEE JOURNAL.

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[For the American Bee Journal.]

NOVICE.

DEAR BEE JOURNAL:—We have had many little successes since we last wrote you, and some of our "pet ideas" have not been quite a success.

For instance, our half-ton feeder don't work quite as smoothly as the tea-kettle feeder. In the first place, the bees objected to going down into so large a box, so we took away their hive, and hung twenty-five combs just above the float and these were speedily filled in good shape. We removed them, and gave them fifty combs next; these were partially filled, and then they began to grow lazy, and robbers began to get in. As the float lowered matters grew worse, and now they are dying on the float in spite of ventilation and all the care we can give them.

Perhaps, as a friend suggests, they are worked to death, for bringing two hundred pounds of syrup two feet high in twenty-four hours, is quite a job, and may be, our project of making one colony prepare the winter food for seventy, is not going to do after all; but we are going to supply them with brood, and give it a further trial.

We were at one time quite hopeful of getting combs built by supplying the bees with sugar worked up with wax, on Adair's plan, but so far the amount of comb built is not more than the consumption of the same amount of sugar alone would produce, and the wax is left in irregular shaped masses, with rude cells partly fashioned thereon. We followed directions very carefully at two different times. Who has had better success?

Mr. Editor, the types in our last have, in several places, made our communication rather obscure, viz., page 51, left hand column, line 15 from top, read "fair" instead of *firs*, and in middle of same column, read "nailed" instead of *railed*, and omit the word "one" before partially. Also, in middle of right-hand column, same page, read "chemically pure food" instead of *chemicals for food*, for we certainly would not drug our bees.

Some one writes us to please be a little more explicit in regard to the entrance to our hive, which we try to do as follows.

If you shove the hive forward, so that it projects over the bottom enough for an entrance, you will, of course, have an entrance as wide as the hive as soon as you have any that will allow a bee to pass; but, if you cut away the lower *inside* edge of the front end board, and cut it deepest in the middle, you will have an entrance that is small at first and enlarges as the hive is moved farther forward.

Dr. J. A. Newton, of Booneville, Indiana, asks the following questions:

How deep are your frames, inside measurement, and how long?

Can bees be wintered on their summer stands in your hives, if protected by straw?

What is your opinion about double-wall hives, say four or six inch space all round, filled in with straw or sawdust?

Have your frames a cross-piece in centre?

My frames stand in the hive, on a fixed bottom board, and do not like it.

Would a frame twelve inches high be too tall to lift out easily, and would the combs be likely to break down?

Our frames are, inside, 8 $\frac{1}{2}$ deep by 17 $\frac{1}{4}$ long. Bees can be wintered as well in the hive we mention, as *any on their summer stand*. And we should give them no protection whatever, unless it be from the wind, but should endeavor to have them receive all the *sun* possible. Give them about ten pounds more food than when housed, and we think there will be little trouble.

In regard to double walls for hives for wintering, perhaps they have been as often tried and discarded by every one who becomes a bee-culturist, as almost anything else (unless it be fixing the frames at equal distances) and probably will be for some time to come. We will say briefly, that such a plan deprives your bees of very much of the warmth of the sun, and gives almost none of the advantages of a frost-proof, special depository.

Unless bees can be kept where water will not freeze, they had far better be as much in the sun as possible.

We really shall have to beg to be excused answering the last three questions, more than by referring to our circular, or we might be accused of using these pages for something we have to sell.

In answer to several inquiries, we would sug-

gest that a building made frost-proof for wintering, is, on many accounts, to be preferred to a cellar, and as it can be located in the middle of the apiary, is much more convenient.

Many will remember the cases mentioned in Mr. Langstroth's book, and elsewhere, of colonies being wintered on four or five pounds of sugar candy; as this sugar candy is nothing more than sugar in a state of great purity, it is nothing so very strange after all. In fact it has been recommended that this candy be made into syrup, and we believe a quart was recommended as sufficient.

We, at one time, thought that cakes or bars of A coffee sugar, laid on the frames under the quilt, would be an easy way of preparing colonies for winter; but in that case sufficient water might not always be at hand, so that we think that, all things considered, the syrup sealed up in the combs the safest.

Box honey, in our locality, has been a complete failure, and in fact, is often so in seasons that are not unfavorable.

Even the Bay State hive failed to give a pound of honey this present year or last, and no swarms. It is owned by a friend who thinks that he might have obtained a fair profit had he used the extractor, as he did with his other colonies, over one hundred and fifty, and he is a very successful beekeeper, for this was one of more than average strength.

In answer to one query as to why he did not use the extractor on it this season, he replied, that it was that such large frames were so very difficult to remove. We mention this because we fear that the hive has been more lauded in these pages than it deserves.

It is not a fact that when large yields of box honey have been secured, still larger would have been received had the extractor been used; perhaps not *seven* times as much in all cases, as we have sometimes stated it, but enough more to much more than make up the difference in price.

Mr. Chapman, on page 61, did not understand us evidently. We meant to make our query this: Has any one had cases of bee disease when bees were able to fly daily? When confined to the hive by cold weather in March and April, in some cases, we have seen the same effect from it.

In regard to bee veils, we threw ours away last spring, and have not used one since, and must say we really believe we have been stung less than when they were used, and we could not now be induced to bother with them; yet stay! if we were again obliged to use closed-top American frames, a veil *might* be needed even by

NOVICE.

[For the American Bee Journal.]

How Gallup's bees wintered on their summer stands.

My large hives, I informed the reader, had a chamber 8 inches high for winter purposes. I renewed the honey boards and substituted a piece of course bed ticking, and in two cases a piece

of old thick bed quilt. This was placed directly on the frames. I then filled the chamber full of dry chaff, pressing it down. Dry saw dust is an excellent material for this purpose. I nearly closed the lower entrance, and left the inch hole open. This hole is well up under the cover of the portico and shaded by it. The object of this hole, is in case the lower entrance becomes covered with snow, the bees cannot smother, and is what is called horizontal ventilation. Two hives I fixed in this manner; after putting on the cloth or quilt, I made a frame just to fit inside of the chamber, and nailed on it a course cloth. After placing this on the chamber, crowd down the frame and fasten it there. Now fill your chamber with the dry material, and if at any time you wish to examine the bees, lift off the roof, and then by lifting off the chamber all packing comes off with it. Now roll up the quilt next to the bees and make your examination, replace all and your packing will be undisturbed. Now the object of this dry material is not to absorb the moisture from the bees, but to allow this moisture to pass off instantly and surely, and yet not allow the animal heat to pass off too rapidly, or allow a current of air to pass up through the cluster of bees. To explain this more fully, suppose we make a tight box 8 feet square, and fill it with dry material, and place it over a strong stock of bees, in such a manner that all the moisture from the bees passes directly into this box, and there being no escape for the moisture, it must be absorbed and retained by this absorbing material.

What would be the consequence in a long, severe and steady cold winter. This whole box of material would be one saturated mass of wet and mould, and your bees would be in the same condition. They would have the dysentery, without a doubt, but place four inches of dry saw dust over the bees and allow upward ventilation above this saw dust, and all remains perfectly dry at all times and in all weathers. Both the saw dust, and the comb, and the bees below the saw dust, will stand any amount of cold, provided they are kept dry in the above manner. To farther test this, suppose we lay a board flat on this saw dust for one night, when the thermometer is 20 degrees below zero. In the morning we have perhaps an inch thick of frost on the underside of this board. Now the sun comes up, the weather moderates, and this frost melts and runs down through the saw dust among the bees. This is all wrong. Now remove the board and with the inch holes in the ends of the roof (covered by wire cloth), our saw dust is perfectly dry at all times and in all weather, and so are the bees. No person could ask for bees to come through in a better condition. Mine wintered as above in my own hives during the past winter. I have double-cased the ends of all my large hives made this summer, and by taking out the outside combs and substituting frames filled with straw or old clothes. A strong swarm will winter without the consumption of any more honey, than they would in a cellar or special repository.

All hives should be shaded from the warm, sun shining directly on the entrance in winter

as it may entice the bees out to perish on the snow every sunshiny day. Two of my hives set on the south side of the grove directly in the sun, and those I shaded with boards. The large 32 frame hive set in the grove facing the east, and entirely in the shade, and the bees never even attempted to come out unless the weather was sufficiently warm for them to have a regular flight, which only happened twice a day during the winter, yet on stooping down and looking into the inch hole, the bees could be seen at all times, and that, too, in the coldest weather. The New Idea hives made this summer I have double-cased sides, and otherwise they are calculated to winter with some preparations of the others on the summer stands. Don't send us any dollars, as we certainly shall do as we have heretofore done. That is, whether our ideas are worth anything or not, in due time the reader will get them free of charge.

E. GALLUP.

[Translated for the American Bee Journal.]

Letter from Bruce, Canada.

MR. EDITOR:—I am still an admirer of the JOURNAL, and have been so now for some years. The varied and most interesting reports, connected with beekeeping from so many parts of the globe, would justify the change of its title from that of "American Bee Journal" to that of the *World*.

Generally the reports that reach you are from places favorable for bees. I should like to see in the *Journal* more reports from apiaries further north; for the nearer we are to the north pole with our bees, the greater obstacles will meet us in beekeeping.

Thousands of colonies of bees perished last winter on this side of the line, but no report has yet reached you of the calamity. Here, it is common to see some homesteads, formerly enlivened with the hum of bees, and ornamented with rows of beautiful hives, now desolated, as far as bees are concerned. Here and there we meet a person lamenting over his loss, saying: "All my bees died last winter. I have not a bee left me. They had plenty of honey, and I cannot understand what destroyed them." The cause of this general destruction of bees last winter can easily be accounted for. The winter was unusually long and severe. Just think, Mr. Editor, I put my bees into winter quarters on the 24th of November, and could not venture to take them to the light of the sun till the 5th, of April following, and then the snow was two feet deep. Besides, last fall was very unfavorable for bees in these parts. Breeding ceased very early, and as but few are hatched in winter during confinement, the most of the bees were old when taken out in the spring, and perished in their first flight. This, of course, left their colonies so weak as to have made hatching impossible. I am satisfied, the rapid decrease of colonies in spring, is owing, to a great extent, to the age of the bees composing them; and how to carry bees successfully through long and severe winters, so as to prevent their rapid de-

crease in spring, is a question of great importance among beekeepers, at least, among those whose lot has been cast in these northern climes.

If we could do as NOVICE did, air our bees on the 12th of February, even at the risk of newly washed white clothes being spotted, we would be all right, but such a thing is out of question here.

Can you, Mr. Editor, tell me why the strongest of bees, when put into winter quarters, often come out the very weakest in the spring? This I frequently find to be the case. May a hive have too many bees for wintering safely? To enable you, or any of the readers of the *Journal* to account for this, I may give you my mode of wintering. I put my bees in a cellar, which is perfectly dark, dry, and well ventilated; removing the honey-board, the chambers for the honey-boxes are kept full of air, by three inch holes through the caps. I close the entrances, and in this condition I leave the hives for winter. Ordinary colonies, in this way, winter to my entire satisfaction; but those that are *extra* strong with bees and heavy with honey, are for the most part of the season in a restless state; and consequently, large numbers of them die, leaving their combs besmeared with their excrements. I anticipate the general answer of my query? "Your bees are too warm," you will say. Well, I am inclined to agree with you; but how can I avoid it? The rest of my colonies do well. They could not do better anywhere. Should I put very strong colonies in a cooler place than a cellar? Would they do outside, where the winter is long and severe? What would NOVICE do, if in my stead? What would GROMM or GALLUP do?

Gentlemen, let us hear from you through the *Journal*. Of course you must have had the same difficulty in your day. How did you overcome it?

But, Mr. Editor, though beekeepers have difficulties in this locality connected with long severe winters, yet they have advantages. They have no need of planting basswood trees, for they have a *forest* of them now, in full bloom, and if the woodman's axe would only spare them, the plantation process would not be required here for ages to come. We have also white clover in great abundance, and natural to our soil, from the 1st of May to October, and many other honey producing plants too numerous to mention here.

In my communication to the *Journal*, last season, I stated my belief that a queen may pair more than once. I am now more fully convinced that my belief is correct, for I have just now a most beautiful Italian queen, which produced last season as pure progeny as could be desired; but the most of her offspring this season show not a trace of Italian gold. She was hatched last year, early in the season; is now rapidly declining, and is actually an old queen. Can any one account for the change in the color of her progeny, but by the supposition that she paired with two different drones?

Let me relate another fact of some interest. Last spring I had a \$10 queen, nearly three

years of age. Her colony, till May last, was strong and active. Suddenly their activity ceased. They were at once examined. I found two queen cells in the hive just closed over, and concluded that my queen was dead.

I caged another in the hive to replace her, and left the cells in the hive. In two days I returned to liberate the queen in cage, but in my operation I discovered my old queen in full life; also, the two queen cells, which I removed. I liberated the imprisoned queen, and took my old queen to another hive, where she was safely introduced. She laid a few eggs among her new subjects, the most of which produced drones. In a week's time she disappeared. I suppose she died of old age: query. Is it a fact that the colony that first had her, discovering her infirmities, and anticipating her death, prepared for that event, even before it happened, or before she disappeared?

J. ANDERSON.

Tierton, county Bruce, Canada.

[For the American Bee Journal.]

How to Build a Beehouse.

As some of the readers of the Bee Journal may wish to build a receptacle for their bees to dwell in during the coming winter, I will tell "what I know about" building such a house, so as to secure *warmth, darkness, and ventilation.*

In the fall of 1870, I erected a building, 14 by 16 feet, from out to out; posts, 11½ feet; walls, 18 inches thick, filled with sawdust; two floors, 18 inches apart, with sawdust between; 12 inches sawdust above the ceiling; one doorway in south end facing apiary.

To secure ventilation, I placed a continuous tube, 6 by 12 inches, on the east, north, and west sides of the room, resting on the floor and against the walls, with outside sliding doors, same size as the tube, on the north and south ends of the building. On the inner side of the tube, I bored one inch holes, six inches apart, alternately, near top and bottom, the whole length of it.

Immediately under the ridgepole I placed a second tube, of the same size, extending the length of the building, with an outside opening at each gable end. A third tube of the same size extends from the centre of the ceiling to the tube under the ridgepole.

In the doorway are two doors; the inner is two inches thick (made of inch boards, nailed together transversely), and fits closely, opening inside the room. About 14 inches from the top of this door is a 1½ inch hole, which is covered by a piece of glass on the inside, against which is placed a thermometer, so that the degrees, ranging from 25° to 40°, can be seen through the hole. A slide covers this hole, on the outside of this door. The outer door is one inch thick, has a six light, 8 by 10, sash in the upper part of it, and swings outside. Four tiers of shelves extend around three sides of the room. The top of the lower ventilating tube, being 7 inches above the floor, will answer for the first shelf.

This room will accommodate one hundred colonies of bees.

The sawdust prevents frost from entering to any extent, the temperature ranging from 28° to 38°, during the winter.

If fifty or more colonies were in the temperature could be kept at any point desired between these figures, by opening or contracting the doors of the ventilating tubes. When the inner door is closed, no light can enter the room. When the wind is in the south, I open the south ventilating door and close the north door; when the wind is in the north, I open the north door and close the south door, by which means a current of air is caused to pass in at the ventilating door, through the inch holes, into the room; all impure air, in the meantime, will escape through the upper ventilating tube.

When I wish to use the extractor, I close the outer door and open the inner.

No bees can get to me, and the window in the door affords plenty of light.

The temperature of the room can be known at any time without disturbing the bees, by opening the outer door, and moving the slide from the hole through which the thermometer may be seen.

In this room, *warmth, darkness and ventilation,* are secured to my perfect satisfaction.

In the winter of 1870 and 1871, twenty colonies were in this house during 102 days. By weighing each hive and contents, when I placed it in the house, and again in the spring, when I took it out, I found the greatest consumption of honey by any one colony to be 13 lbs.; the least consumption, 2 lbs.; general average, 8½ lbs.

Every colony wintered well, save one, which was queenless when placed in the house.

Last winter I was not as successful. Peabody's Honey Extractor worked so nicely, that very little honey was left for the bees, when the season closed, and being very busy during the fall, I neglected to examine my bees and furnish them with needed supplies. The consequence was, several colonies died from starvation. Scarcely an ounce of honey was found in any hive in which the bees were dead. Very little sign of dysentery was discovered in any hive, though kept in winter quarters a month longer than usual. I attribute my loss to pure unadulterated carelessness, and nothing else.

JOHN S. DEWEY.

Spring Lake, Mich., Sept. 2, 1872.

[Translated from the Bienenzeitung.]

Concerning Wintering Bees.

The sad tidings which during the past winter came to us of the loss of thousands of swarms, is proof positive of how dangerous and difficult a business it is, safely to winter our beloved bees. These many and often disheartening complaints of failures and losses, naturally do not seduce any to undertake bee-keeping, but on the other hand frighten beginners, and cause them to forsake the business.

The knowledge that so many of my bee-keeping friends are so desirous of learning more in relation to wintering bees, leads me to the choice of my theme. I can give nothing new and wonderful as the result of my experiments, but only call attention to what has long been known, but neglected, and which from various circumstances has been forced upon my attention. The great object with me in the conduct of my apiary has been to so winter my bees, that in passing through the cold seasons of the year, they will not lose the advantages they gained during the summer.

The apiary which was under my superintendence was situated on the side of a steep hill, over which, at about eight meters distance, a much travelled thoroughfare passes. The passage of the heavy wagons over this frozen road in winter, greatly alarmed, not only my bees, but injured the hearing of persons, and shakes from the foundation the houses of those living near the road. To this there is another disadvantage added, that there are neither trees nor shrubs to prevent the cold north and east winds from striking with full force my hives. No wonder that amid these difficulties I was much troubled how to procure rest during the winter for my bees, and to deserv some place of protection from the cold. Having no cellar suitable for wintering the bees, I was forced to prepare a place in the open air. As I had little experience in such matters, I went to my bee books for counsel and advice, and after long search I came luckily to the *B'euzeitung*, 1857, Nos. 16 and 17, containing an article of Pastor Scholz, of Hartigswaldan. This article gave me much pleasure, as I found in it much more than I had expected to find. Quickly next fall, I built a bee-house, which did not work to the injury of the bees, but to their greatest benefit and well being, because every advantage claimed for his bee-house by Pastor Scholz, were found by me to be correct. The bees consumed towards spring about half the quantity of honey, and came out in a good condition, and populous, in spring, showing hardly any loss of bees whatever; the combs were neither damp or mouldy; they suffered nothing from thirst or want of air, and the hives, which formerly suffered much from exposure during the wet winter months, remained uninjured, and were safely protected from thieves. It was a most successful wintering. Since 1860, I winter my bees in such houses, and always with a like result. During the winters covered by this long period, I have not lost one swarm, excepting those not put into the bee-house. All calamities, as dysentery, want of air, thirst, &c., are unknown to my bees—they are and remain always quiet.

The desire for water is first observed in stocks after they have been removed from the bee-house some days, and have flown. Until then, water placed in troughs near the hive remains untouched. That my bees do not sooner feel the need of water, is to be sought for in these fortunate conditions, that, so long as they are in the darkness and even temperature of the bee-house, they have little or no brood, (the stocks upon being brought out are without brood), and

the increase only begins when the hives are placed in daylight and the open air.

Just as bees require in spring and summer pleasant and warm weather in which to prosper, so, I hold, that warmth next to food, so placed that it can readily be obtained by the bees, is the chief requirement for safely wintering bees.

Notwithstanding I place my bees in the bee-house, I take especial pains to provide for them warm hives, and provide in every possible way for their safe wintering. In the fall the honey supply of each hive is carefully examined, the combs assorted; over the clustering place of weak swarms, who generally have their honey on one side of the hive, full combs of honey are placed; the interior of the hive is lessened; the tops of the hives are made air-tight by a coating of clay; the space between the tops of the combs and the hives, and the side between the combs and the door, are filled tightly with hay or straw, besides doors of platted straw are pushed in and thickly covered with clay.

Thus prepared my bees are placed in the bee-house about the middle of November, or as soon as continuous frost appears, and remain until the middle of March, when usually there occurs weather sufficiently mild to allow the bees, without danger, to have their first purifying flight.

It is a matter of indifference to me, in winter, whether the thermometer sinks down 20°, or whether the cold north and east winds play their mischievous pranks, and howl and blow, for I have the knowledge that my beloved bees are safely protected from harm, and that when brought out next March they will greet me with a "Happy Spring."

Too closely or warmly protecting hives has been repeatedly condemned as injurious. This may be true when they are suffered to remain on in their summer stands, especially may it be so when unusually populous stocks are in pavillions; yet in the bee-house, I have never met with any injurious consequences. I place in them strong and weak stocks, and have repeatedly wintered queens with very few bees, and have always had them pass the winter safely.

Encouraged by my great success in wintering my bees, I desired to impart my knowledge to my brother bee-keepers, and to urge them also to try this plan, and to give their bees a suitable protection for the winter, and to reap the advantage of this successful system.

Alas! to the great majority my words passed as the idle wind; the groundless fear of suffocating their bees; the little pains and small outlay required for building are the reasons of the failure of the attempt. Only two bee-keepers, dwelling in my immediate neighborhood, who had seen how safely my bees wintered, and how strong in numbers they came out of their winter quarters in spring, were induced to adopt my system, which they have now used for some years with equal success. How easily and cheaply such a bee-house can be constructed, we will now proceed to show.

Towards the end of September, I select the position and remove the weeds, and gathering the needed wood, commence the building.

I place firmly in the ground, 9 meters apart,

two posts, which should be about 2 meters above ground. To the top of these posts I nail fast a piece of stout scantling, and then attach to this the rafters, one end of which rests upon the ground, and upon these are nailed the slats, the whole having the appearance of a tent. Through the top a small wooden chimney is placed for ventilation.

As the ground upon which the bee-house is placed is very loose, it is not easy to construct the ventilating chamber suggested by Pastor Scholz. I, therefore, leave this and the drain entirely away, and instead thereof place at the end of the bee-house a small air canal made of three boards, two standing on their ends, and the third laid on top of them. When there is a severe frost, I stop this canal with hay; but in mild weather it remains open. To prevent the entrance of light into the chamber through this air canal, I place a broad board in such a manner before it, that it in no wise interferes with the draft. I then place upon this frame a layer of reeds or straw, 3 meters thick, leaving one end open for an entrance. This thatch usually unites at the top, but is usually too thin at the summit. This deficiency must be made up by placing upon the ridge some cast away flax stems, or potatoe stalks, which are readily obtained in the fall. The house is then covered with ground to the depth of about one half meter. Care must be taken not to overload the frame with ground. Should any of the cross pieces show a tendency to give way, they must be strengthened by supports. As the earth used for the covering will be taken from the sides of the bee-house, the small ditch caused by its removal must be made to slant from the sides, so as to prevent the earth from slipping from the sides of the house. Thus built, the bee house is ready for use. I reject altogether the layer of dead leaves recommended by Pastor Scholz, owing to their liability to take fire.

Mice are apt in the fall to seek to make these bee-houses their winter quarters. Care must be taken that they do not establish themselves in it. For this purpose I place in the air chamber a trap, where the mice are readily caught. My bees have never suffered any from the attacks of mice. The bees are placed in the house in this manner: The small sized hives are placed at the side, while the higher ones are placed in the centre where there is more room. They are packed in closely aside of each other and on top. When all the stands have been safely placed in the house, the entrances of the hives, which in removal were closed, are again opened, and the entrance of the bee house will be closed with slats, covered with thatching and earth, just as the other four sides.

When I read of the various experiments aspiring apiarians have made to successfully winter their bees, I inwardly rejoice. I have had no desire to try any other method. * * Should I be successful in leading my brother bee-keepers to adopt a safe method of wintering their bees, I shall have been richly rewarded.

J. KLENKE.

Mauche, February 6, 1872.

* Meter—A French measure, 39.37 inches.

[For the American Bee Journal.]

THE THEORY OF WINTERING.

Extract from Butler, 1634. A. D.

At *Scorpio*, dress your hives for winter; cloome them close, mending all brakes and faults about them; and where the hackels be worn, set new in their stead, that they may keep the hives dry and warm.

After autumn the sun is drawing near the winter tropic, with a short and low course above our horizon, there follow three still months, (*Sagittarius, Capricornus, and Aquarius*), in which, as the plants lie still in the earth, waiting the sun's return to revive them, so do the bees lie still in the hives, passing this fruitless time in sleep and slumber. Yet so, that if there happen a mild and warm hour, they presently perceiving it, awake out of their swivet and hie them out of doors with all alacrity, that they may take the fresh air, recreate themselves, drink, exercise their wings, carry out their dead, and other noisomeness, and lighten their little bellies which are oftentimes so stuffed when the weather suffereth them not to go abroad, that they can hold no more, so loth are they to defile their nests. And having thus refreshed themselves, at their return they take their repast and then betake themselves again to their rest. But many such days, specially in time of scarcity, are dangerous, as causing them to spend much of their store, which in still frosts they would spare.

The first foul and cold weather after mid-Sagittar, shut the wickets close to save the bees from the titmouse, and from the cold, as well within the hive as without. For as the frost and snow and cold winds, yea, and the ordinary disposition of the air, do chill many of them whom the flattering sunshine enticeth abroad, so the great frosts, striking through the door, do freeze the nethermost in the hive to death, so that by little and little many stalls, in some winters, have been thereby wholly destroyed, the which, by keeping them warm, might have been preserved. But when you shut them in, be sure the hives are always sure and close; but the bees, when they awake, will strive by all means to come forth, though they never find the way in again. But further experience of later times hath taught, that bees are best preserved in winter by a general restraint from the open air, that they may pass this time of no gain in sleep and slumber, with little waste.

RESTRAINT IS EITHER SINGLE OR DOUBLE.

Double restraint is the shutting up of the bees in the hive and of the hive in the house. Single restraint is the shutting of them in the hive abroad as they stand. In both which are to be observed the circumstances of the manner, the time, and the place.

For the manner of the double restraint, either they must be carried in with the stool as they stand, or be set upon a board or plank, closely cloomed, the hackle put off, and the door barred, having not so much as a breathing place, with a

numeral note of their standing in the garden fixed to the hive.

The time is the three still months, to wit: from the first hard weather in *Sagittarius* to the first calm and pleasant day in *Pisces*, (except continued good weather call them out a little sooner) when it is time to set every stall in his old standing again. If in the removing, you mistrust any stall for his lightness, it will be good, when they are come back again, warily to feed them, so that no stranger partake with them.

And for the place, it must be close, dark, and quiet. Close, that no heedless body come there to wag or jog the hives; dark, that the light draw not down the bees; quiet, that no noise awake them. What the poet said of the sound doubled by echo,

Ubi concava pu'su

Saxa donant, vocisque offensa resultat imago,

is meant of any (though chiefly of violent and reiterated) noise. And if the room be not free from mice, set traps for them, and often view the hives that there be no breach made into them.

This housing or double restraint seemeth most for the late and small swarms, of whose sufficiency you shall doubt.

The single restraint is fit for the best stalls; the manner whereof is, that they be close cloomed, fast barred (with a little breathing-place only if the hives be full of bees) and well hackled down to or below the stool.

The place (being their old standing in the garden) must be kept close and quiet, free from noise and noisome cattle, that may either wag or wake them.

The time of this restraint must be shorter, beginning the first cold day after *Mid-Sagittarius*, and ending the first warm and calm weather after *mid-Aquarius*; so soon as by their continual murmuring, the bees signify their desire to come abroad, then presently let them go.

If you distrust their safety in your garden, you may have them, for what time you please, within the compass of this single restraint.

And for the meddling sort of swarm, use either the double or single restraint; but, however, let them be without any breathing place, as having air enough in the vacant rooms of the hives, and give them the time of the double restraint.

Nevertheless, when restrained, bees are thus dismissed, if at any time, you fear a piercing night frost, you shall do well to bar them all up in the evening, and in the morning to unbar them again, unless either snow or rain, or boisterous wind forbid you. But while the snow covereth the ground, let them not out at all.

From Wildman.

Providence has ordained that insects which feed on leaves, flowers, and green, succulent plants, are in an insensible or torpid state from the time that the winter's cold has deprived them of the means of subsistence. Thus, the bees during

the winter, are in so lethargic a state that little food supports them; but as the weather is very changeable, and every warm or sunny day revives them, and prompts them to return to exercise, food becomes necessary on these occasions. Mr. White is of opinion that a greater degree of cold than is commonly imagined to be proper for bees, is favorable to them in winter. If a sharp frost continues for two or three months without intermission, you may observe through your glass, that the bees are all this time closely linked together in clusters between the combs. If they are not altogether without motion, yet it is certain that they stir not from their places while the cold continues, and therefore eat not at all.

The following directions are given for feeding of bees in the *Maisonrustique*: Replenish the weak hives in September, with such a portion of combs full of honey taken from other hives, as shall be judged to be sufficient supply for them. In order to do this, turn up the weak hive, after taking the precaution of defending yourself with the smoke of rags, cut out the empty combs and put the full ones in their place where secure them with pieces of wood run across in such manner that they may not fall down when the hive is returned to its place. The bees will soon fix them more effectually. If this method be thought too troublesome, set under the hive a plate of liquid honey, unmixed with water, with straws laid across it, and over these a paper pierced full of holes, through which the bees will suck the honey without daubing themselves. This should be done in cloudy or rainy weather, when the bees stir least abroad, and the hive should be covered to protect the bees from robbers who might be allured to it by the smell of the honey.

The degree of cold bees can endure, has not been ascertained. We find that they live in the cold parts of Russia, and often in hollow trees, without any care being taken of them. Their hives are frequently made of the bark of trees, which does not afford them much protection from cold. Mr. White, therefore, confirms Mr. Gedde's observation that bees which stand on the north side of a building whose height intercepts the sun's beams all the winter, will waste less of their provisions (almost by half) than others which stand in the sun, for coming seldom forth, they eat little, and yet, in the spring are as forward to work and swarm as those which had twice as much honey in the autumn before. The owner should, however, examine their state in the winter, and if he find that instead of being clustered between the combs, they fall down in numbers on the stool or bottom of the hive, the hive should be carried to a warmer place where they will soon recover. He must be cautious in returning them again to the cold, lest the honey be candied as before observed.

Where the winters are extremely severe, the authors of the *Maisonrustique* advise to lay on the bottom of an old cask, the depth of half a foot of very dry earth, powdered and pressed down hard, and set on this the stool with the hive; then to preserve a communication with the air, which is absolutely necessary, to cut a hole

in the cask opposite to the mouth of the hive, and place a piece of reed or of elder made hollow from the mouth of the hive to the hole in the cask, and after this to cover the hive with more of the same dry earth. If there be any room to fear that the bees will not have a sufficiency of food, a plate with honey, covered as before directed, may be put under the hive. If the number of hives be great, boxes may be made of deals nailed together, deep enough to contain the hives covered with dry earth. The bees will thus remain all the winter free from any danger from cold, hunger, or enemies.

Every hive should have at least twenty pounds of honey in it in the beginning of the winter. If short of that quantity a reserved hive should be put to them, or they should be fed with clear honey put into a pewter dish covered with paper and put under the hive at night.

That bees suffer such degrees of cold as we are strangers to, without detriment, seems certain; nor is it easily accounted for, why a much less degree of cold becomes fatal to them in our mild climate. If I may venture my opinion, I think that in these extreme colds the bees are so perfectly frozen that their juices cannot corrupt or putrify; but they remain in the same state till the return of spring, when the change of the weather being sudden, the bees soon come to life; whereas, in our climate they are so far chilled as to lose the signs of life, and their juices being still in a liquid state, soon putrify, and real death soon ensues with corruption, the stench of which proves destructive to the live bees if the dead bodies remain long in the hive. It is, therefore, a good rule to examine the hive from time to time, whether any bees fall to the bottom, that if they do, the seeming or real dead should be removed.

Hives should never be placed on stones because they are susceptible of too much heat in summer, and are so cold in the winter that it is immediate death to every bee that lights on them. Even wood is then too cold, and, therefore, I would advise the owners of bees to have straw bottoms, in every respect similar to the straw covers already described, to be laid under the hive during the winter, that when the bees descend they may not be chilled by the coldness of the substance they light upon.

The bees have the sagacity to judge of the proper degree of cold, and when they feel it too great upon coming to the door, they drop their excrements on the stool and return to their companions, unless they are allured out by a bright sun. On this account it is proper that during the winter the mouth of the hive should not face the sun at noon, but rather the west. The mouths of the hives should be lessened so much during the winter, by means of a slide fitted to it, that there may be room left only for air, and to afford a passage to two or three bees.

Even in spring many bees lose their lives, being tempted out by a bright sun in search of food. The mouth of the hive should, therefore, be continued facing the west, till all danger from cold is past; for if the mouth has been placed to the south, a clear morning may carry them out, being tempted by the glare of the light

which shines in; but such a morning often brings a cloudy afternoon, which prevents their going out. When the season for working comes on they must not be restrained from going out by any bar in their way, for they become so impatient of confinement, that they will even die in search of an outlet, rather than bear imprisonment.

Extracts from the work of Freyherrn von Ehrenfels. 1829.

The wintering of bees begins in our climate in the month of October, and begins everywhere when nourishment ceases, brooding diminishes, and the honey harvest has fully ended.

The examination of all the stocks as regards their brood, population, and honey supply, is the first and weightiest work of wintering. At the beginning of October most swarms have brood. Where this is found, one may feel assured that they have a fertile queen, and has the necessary foundation for well wintering. All such stocks should be marked No. 1. Stocks having no brood will be considered in a doubtful condition. They may have a sick and unfertile queen, or none at all. These should be marked No. 2. Stocks showing drone brood should be marked No. 3. No. 1 stocks are in a safe condition for wintering. No. 2 should be destroyed or united together. No. 3 should be destroyed for their honey, and the bees used to strengthen other stocks.

A populous stock, with little honey, will be easier wintered than a stock rich in honey and poor in bees.

The worker bee has, with me, more value now when work and forage cease, than in the spring when their loss is more easily supplied by the rapidly maturing eggs of a fertile queen. The old proverb, "That in spring every bee is worth one kreuzer," is changed by me: "In spring every bee is worth one kreuzer; in fall, two kreuzers."

With me, stocks having more than twenty pounds of honey, are considered safe for wintering. Stocks having less than twelve pounds are destroyed. Stocks having from twelve to twenty pounds, are supplied with honey.

Feeding with fluid honey in autumn, is not to be recommended. This fluid honey being uncapped and through heat, is made watery and sour; the brood place and winter quarters will be thereby narrowed and disturbed, and the honey will, in its fluid condition, be more readily consumed; with ten pounds of fluid honey uncapped, I will not have as healthy winter nourishment as with five pounds of capped, well evaporated honey, and the stock is better protected against robbery than when containing uncapped and unevaporated honey.

It is well known that more thousands of bees are lost through cold than hunger. Many attempts have been made to moderate the cold in the hive; the removal of the hive to cellars and rooms, their burial, and their artificial heating. Under all these modifications, the winter and a

certain degree of cold, is the greatest murderer and notwithstanding the many plans devised, *the successful wintering of his bees is the master stroke of the bee keeper.* In its wild state, the bee protects itself by its numbers and its rich honey. It plasters its dwelling with propolis, seeks the calm forests, and avoids all drafts.

These facts must be taken into account when wintering bees in a state of cultivation. The greatest preservative against winter cold, is to have your stocks populous; and he who understands the art of uniting them, can use each bee to the greatest advantage to the whole.

So long as the internal condition of the hive is properly regulated, I believe the bees can withstand the greatest amount of external cold; how, otherwise, could wild bees live in the cold north woods? A populous swarm can, by means of its animal heat, raise or depress the temperature of the hive, according to the demands of the weather. As from the heart of an animal warmth flows to the most distant parts of the body, so, from the centre of the swarm heat flows, and by the increased consumption of honey, increases according to the demands of the cold.

The fundamental rule of my practice is; *That wintering in the open air, even in the coldest weather, is the healthiest, and in its consequences, the safest.*

Bees wintered in buildings must be cut off for four or five months from the pure fresh air which is as necessary to them as to mankind. The severest winters have some mild days, when bees can fly out and purify themselves, and by changing their positions in the cluster, thus relieving the upper ones who bear the weight of the swarm, and also those on the outside of the cluster who have had to endure all the cold.

These changes are prevented by wintering in dwellings. Their winters last nearly five months. Hence, many of the worker bees, and often the queen become sickly, and are more weakened by the loss of workers than those stocks that wintered in the open air.

The burial of swarms in sand, dry earth, wheat, etc., without any communication with the air, is unnatural, and should receive no encouragement. M. Spitzner well says: That, as regards the freezing of his bees, the beekeeper need give himself no trouble, even in the coldest winters, if he has done his duty in autumn. The most stocks starve and not freeze to death.

Extracts from the work of Johann Baptist Vogelbacher, 1855.

With the end of August the honey harvest usually ends, and now the bees must be weighed to see whether they will have enough nourishment until the beginning of their supplies next spring, or until March. You should know the weight of the empty hive and frames (mine weigh fourteen pounds); the bees and comb should weigh six pounds. Now each stock will require for the winter, at least from six to ten pounds of honey. Five pounds of honey make one maas. One pound of honey is usually sufficient for an ordinary swarm per month, a popu-

lous one requires more, a weak one more; when it has to be fed daily and the bees can fly often, a swarm will consume two pounds monthly. Hence, if a stock in September, does not weigh over twenty-six and thirty pounds, it will pass the winter with difficulty.

In the cold months, November, December, and January, a stock requires monthly one pound of honey; in February, March and April, owing to the rearing of brood, two pounds monthly. Were there flying days in November, December, and January, the bees will need somewhat more so that a well-conditioned stock will require from November till April, ten pounds of honey for successful wintering.

When, in autumn, you find that you must feed your bees, estimate what is to be done. How many stocks you will have to feed? How large a store of honey they have, and how many will need assistance?

If you have so many swarms that you will be unable to feed them all, cut out the weakest and give the bees and honey to other swarms. Better to winter successfully a few strong stocks than many weak ones.

Those that you wish to winter, feed just as you did in August and September, till each stock has its proper weight; because the bees now will carry the honey into the cells, cover it, and in winter will be quiet and undisturbed. To begin feeding in October, or November, is too late, as it is too cold and the bees are unable to cap the honey.

Should you have openings in the hive, the feeding can be carried on quite easily. At all times, even in the middle of the winter, if it is necessary, you can feed.

The sign that the bees perished through hunger, is when they lie before the door of the hive and on the combs in a weak, faint state; also when the bodies of the young, immature worker bees are found on the floor. Help must be immediately furnished, and those already weakened must be laid in warm, honey covered cloths, in order to revive.

[Translated for the American Bee Journal.]

Berlepsche's Views on Wintering Bees.

Translated from Die Biene und ihre Zucht.

Every rational bee-keeper will protect his bees from cold and light, may it be in a bee-house or a pavillion, or by placing them in a cellar, chamber, or by burying them in the earth. If the bees are placed in a pavillion or a bee house constructed according to my plan, the entrance may be open for the bees to fly on any quiet day when the ground is free from snow, and the thermometer stands 7° above zero, Reaumer, in the shade. In the evening the entrance is again closed until another favorable day. The same system of opening and shutting should be pursued where the bees are in a bee-house. Stocks that are placed in chambers, etc., are on such days permitted to fly, unless other circumstances should prevent.

Thus says Riem: "When there is no snow on the ground, and the weather warm, and no wind stirring, the bees should be suffered to fly." *Danerhafte Bienenzucht*, 1795.

In opposition to this, Dizierzon and Schimed, Kleine, teach: "The bees must be kept as long as possible in their winter rest, and prevented from a too early flight. It is no injury to the bees should they not leave their hives for four months. The earlier the bees flight, so much the sooner will they begin to rear brood, and most of the young bees, owing to the cold weather, will be lost, and in May those hives which have been permitted to fly early and often, will be mostly weaker than those which enjoyed their first flight a month later, and have also needed more honey for the brood which was lost."

My experience teaches otherwise.

a. Even though it be true that many stocks could without injury endure four, perhaps more, months confinement without any apparent injury, nevertheless it is true that the average would winter better when they have been allowed one or more purifying flights. The longest confinement which, in my 46 years experience as apiarian, (my birthday as a bee-keeper was on June 22, 1822), I allowed, was in the winter of 1864 and 1865, when the bees were confined over 5 months, or 154 days, from 29th October, 1864, to 2d April, 1865; while in the winter of 1844-1845, they were only confined from October 28, 1844, to March 25, 1845, 142 days. But by far the severest weather which this generation ever experienced, was that of 1829-1830, which lasted from the middle of November to the middle of March, nearly 4 months. In all these winters, even in swarms protected against the cold, there were many dead bees, and here and there dysentery appeared, and caused the loss of many swarms. How different in the winters of 1842-43, 1845-46, 1862-63, 1866-67, when the bees could frequently fly out and purify themselves.

b. Is it not natural that the rearing of brood should commence with the first flight of the bees? Strong stocks with proper supplies of honey and pollen, and the weather not too cold, and the moisture sufficient for the preparation of the food, begin rearing large quantities of brood some six weeks and longer before their first flight—have from 10 to 12,000 cells of brood and young bees, and are all in a healthy condition. Is the honey pure, and have the bees, either owing to cold or disturbance, been induced to consume more than usual, there is not much danger of the dysentery, and the nurses and their hatching bees can readily endure without injury, confinement of four weeks or more. Weaker stocks usually commence brood rearing only after their first flight.

c. The young bees are in less danger than the old ones of being lost in the colder days of the year, as they only fly out when the weather is suitable; and old bees would not fly out unless there is a want of moisture in the hive. The most bees are lost in spring, in their searching for water.

d. By closing the entrance and the slats of the bee-house, the flight of the bees on raw and windy days is easily prevented.

4. Often the bees remain in their hives until the end of February, yes, until far into March, without any opportunity of a purification flight, owing to the cold weather, and through disturbance is this desire greatly increased. The following suggestions are then to be observed.

a. Whenever a day free from strong winds occurs, and the thermometer stands 6° Raumer above zero, in the shade, preparations should be made for the flying of the bees. Even should a few bees be lost, that is better than to lose all through dysentery. The bees attacked with dysentery will linger long, and in the end die, while even several hundred bees lost can readily be replaced.

b. It is far more dangerous, when the bees from necessity are allowed to fly when the roofs, fences, trees, &c., are covered with fresh fallen, white, soft snow. It is not so much the coldness of the snow, as its dazzling white, which blinds the bees and causes their destruction. They being blinded, lose their way and become confused, and unable to recognize their place. The snow reflecting the sun in a very powerful manner, they seeking to fly from the sun, pitch into the snow and are benumbed before they are able to guide themselves. If there has been thawing weather or rain, the snow may have changed its color somewhat, and moreover, if the roofs and fences are free from it, there is not so much danger from the flight of the bees. They can rescue themselves better even than from wet ground, and those benumbed are more readily seen and helped. Before the bees are allowed to fly, the roofs of the hives should be freed from snow, so that they may have their accustomed appearance to the bees; shovel the snow away or pound it hard, if it be loose immediately around the stand, and sprinkle ashes, sand, chaff, etc., over it, to remove the blinding color. The snow should be shaken from the nearest trees and fences. Is the wind quiet and warm, and does the sun shine, not many bees will remain on the ground, as they can help themselves on the snow and again fly away. I must, with Vogel, protest against the use of loose straw before the hives, since, unless the sun shines upon it, it will not prevent the bees from becoming benumbed.

5. It is advantageous, also, if before the first flight of the bees, the floor of the hive would be cleared of bees and old rubbish. Grutzmann's new built bee-house, 1669, p. 62. At no work are the bees more awkward and clumsy than in the burial of their dead. They fall with the dead bee upon the cold, damp, often snow covered ground, and can with difficulty loosen themselves from their burden, their claws becoming fastened to its body, and thus we have alongside the corpse a second one. In cleaning the bottom boards, one must work rapidly, and with as little noise as possible, and when cleaning a large hive, should have the assistance of a second person, because when the bees once begin to fly, this work is useless, as the bees will immediately undertake it themselves. Are the bees kept in a wintering house, they should be attended to first, leaving those on their summer stands for the last, because the former will become restless

on being removed to their summer stands, and especially in strong colonies, will come down to the bottom boards. Later, in from 8 to 10 days, must the cleaning of the bottom boards be attended to, as the bees cannot remove their offal any further than their combs extend. *Hofler*, 1614, in *Schroth's True Bee-culture*, 1660, p. 119.

At the back part of the hive, where at this season the honey now is, "offal will again accumulate, which the bees will allow to remain, since they do not protect the combs thus far. Here moths breed too easily and quickly, and soon ascend to the combs." *Martin John, Ein Neu Bienen Buchel*, 1691, p. 9.

This offal must not be thrown away, but placed in a vessel, allowed to dry in the sun and then sieved. The white or yellow particles are from the caps of the cells, and is pure wax. *Spitzner, Basket Bee-culture*, 1823, p. 113.

6. If the bees have been kept in a winter-house, the bee-keeper must be careful to place them as near as possible upon their old stands, as the bees, no matter how long confined during the winter, will not forget their summer place; and should they not be placed there, a sad loss of bees may follow.

7. *Spitzner* says: When the bees make their first purification flight, if you see few or no bees at the entrance, it is to be depended upon that the hive is in a bad condition. Such a stock must be immediately examined.

8. After the purification flight has taken place, the bee-keeper should carefully inspect his hives, to guard in time against queenlessness and defective queens.

Should the unrest continue in any stocks till towards evening; after their flight should the bees still continue to come out of the entrance and crawl around the hive, fly off and return abruptly back, are almost sure signs of queenlessness. A more urgent sign is when the swarm begins to buzz or hum. The difference in these tones are not to be described to a beginner, he must learn them from actual observation at the hive. * * * * * Yes, a careful bee-keeper will always visit his bees in the evening after the purification flight. That is the time that he will discover queenlessness and other misfortunes, and be able to remove threatened dangers.

9. So soon as the bees have purified themselves, sometimes on the same day, but especially on the next flying day, they will search for water, in order to thin and prepare the honey for the brood. In getting water many bees are lost. It is therefore most advantageous to place water for the bees in a convenient place, protected from the wind. *Nichol Jacob, Gründlicher Unterricht*, 1601, p. 52.

In order that the bees will readily find it, and become accustomed to the place, it is well to entice them by putting, in the beginning, honey in the water, which should be slightly warmed and covered with small pieces of straw.

The water might be sweetened even later, but it is not so necessary, and in fact it is better not to do it, owing to the temptation it affords robbers. * * *

When the bees have become accus-

tomed to this place they will visit no other in search of water. It is best to put the water in long and flat dishes, than deep ones, and throw over moss, etc., to protect the bees from falling into the water and being drowned. * * *

A hive getting out of honey in spring will perish. Usually the bees are found dead, but not always; because, before they perish they become numb, and if they have not been in this state for more than 36-48 hours, they may be restored to life, if they be removed to a room, the temperature of which is from 15° to 17° *Raumer*, above zero. The hive is inverted and the almost lifeless bees are thrown from the bottom boards between the combs. When some of the bees begin to move, it is only necessary to sprinkle diluted honey over them, and they will speedily revive. As some of the bees become more active, the room must be darkened, so that they may not fly away and be lost. It is not judicious to close the entrance. When a hearty buzz is heard in the hive, the room must be gradually cooled off, till the bees are brought to their normal winter state. "When there is no honey, the bees will first be unable to fly, then they will move around with difficulty, their movements becoming more and more difficult; at last they cease to move, and are dead." *Donhoff, Bztg.*, 1857, p. 77.

Sometimes in spring, hives are found, having lost from various causes, a portion of their population, and from this cause the habitation has become too large, and it is absolutely necessary to strengthen them. The superfluous combs are removed from such hives, and the empty space stopped with some heat-retaining material. For should a weak stock winter in so large a room, it will be too cold, and will be so injured, while it will speedily regain its strength when the room is lessened and the proper warmth retained. Later, as the swarm strengthens, can the combs be returned, one by one. As I have before stated, it is really advantageous, in spring, temporarily to remove the superfluous combs.

[For the American Bee Journal.]

A Hint from the Old Country.

DEAR SIR:—Allow me to suggest to my American brethren, that in the manufacture of double or triple walled hives for wintering bees on their summer stands, all the front walls, except the internal one, should be of glass. It makes very little difference in the cost, but the advantage is in the fact that the inner skin of the hive gets all the benefit of every gleam of sunshine in winter, while the advantages of dead air spaces is preserved.

In summer the other or back end of the hive is turned to the sun, so that the dead air spaces may keep out the heat. My hives are made on this principle, and answer admirably; they are of the shape of square gable fronted cottages, and the top stories which are the super rooms, are also furnished with glass windows at the one end, so that in winter the sun may shine dead

on to the honey board, and dry and warm the whole.

C. N. ABBOTT.

Harwell, W. London.

[Translated from the *Bienenzeitung*.]

Artificial Honey and Honey Surrogate.

About two years ago, the *BIENZENZEITUNG* celebrated its twenty-fifth anniversary. The advancement in the theory and practice of bee-culture during these twenty-five years was then given in a brief review, but I do not remember anywhere to have seen the mention of artificial honey. Much was written in the papers, and long discussions held in the meetings of the Bee Associations concerning the theory and practice of bee-keeping; but concerning artificial honey, utterly nothing. The idea until now was unknown. It was reserved for Herr Mehring, from Frankenthal, to originate the idea and to enrich the treasury of the German language with a new word, and give to the students of bees and the bee-culture, a new *terminus technicus*.

As has been heretofore made known in the pages of the *Bien-zei-tung*, by letters from Baron and Baroness von Berlepsch, that Herr Mehring exhibited, among other excellent things, a glass jar, which he claimed was filled by the bees with the Extract of Malt or thickened beerwort, wherefore he called this product artificial honey. The judges were in no little embarrassment whether they should give a premium to the artificial honey or not; and I, as I saw from a letter, Prof. Siebold desired to obtain my opinion whether the bees really changed the Malt Extract into honey. This wish I will attempt to answer in the following lines:

The judges gave the highest premium to the other articles of the exhibitor, but withheld the premium from artificial honey, and justly.

Artificial honey has a double meaning. You might understand by it, honey, which having been purified by art, is increased in value and prepared for greater usefulness, and differs somewhat in this respect from ordinary honey, just as through science Fruit is improved from its wild condition.

A premium given for this kind of honey would have misled a large portion of the public, who have had little experience in these things, to use this word artificial-honey in the above sense, and think that the premium had been awarded to an excellent quality of honey, for which a higher price would be asked.

The true meaning, however, of artificial honey, is a honey that is not produced from natural sources, from the nectar of flowers, but is made from a scientifically counterfeited or imitated bee-pasturage, and bears the same relation to natural honey, that artificial wine has to the natural juice of the grape. It can have, to many tongues, a very pleasant taste, and there is little use of disputing over it; and it can also be used for many medicinal purposes, just as the celebrated Malt Extract is used as a universal remedy, but it can never have the spicy and aromatic taste of the true product of the flower. Because

the bees cannot put into the juice they bear into the cells any new material; they can only work up and purify, but cannot produce the fundamental elements.

There may be disputing about this, and the award of the prize at Munich has ventilated the question, whether the product of Mehring's receipt can be true honey, as, in this respect, the bees do not only seek profit from the flower, their best pasturage, but gather the sweet juice shed by the plant lice (honey-dew), and suck out the juice of sweet fruits and seek sugar refineries, and which we name plant-lice-honey, resinous honey, &c., so there is no ground why that should not also be called honey which is made scientifically and fed to the bees.

It is well known that bees will readily take thicker malt extract or malt syrup. Fifty years ago, with my father, I fed the bees with prepared malt syrup for the purpose of stimulating brood-raising.

I dreamt at the time of stocks rich in honey made from feeding malt extract, but my dream passed away with the time. And if the bees do not repeatedly fly out and purify themselves, and if they do not bring in pollen and do not obtain the proper strength from the consumption of their food, they will neglect it and will be in danger of an attack of dysentery. During warmer weather, and when the bees are enabled to make continuous flights, further feeding is useless.

It is better for the bees to procure little but good food than to carry in much but bad honey, which only gives trouble and expense, and crystallizing during the summer, endangers the wintering of the stock. If one considers that, owing to the high price of grain and coal, this artificial food cannot be manufactured cheaply, and that the bees will in no wise store in the cells as much as may be given them, but will consume some portion, it will be readily seen that this work will not prove as remunerative as Herr Mehring expects; and that through the praising and selling of tasteless and unaromatic honey, a good article will be brought into discredit and lowered in price. The attempt to make bees a mere machine for purifying sweet juices or syrups will prove a failure. For this purpose we have machines which will accomplish this end by wholesale and consumed nothing.

It is wholly different with feeding, taking the word in its true meaning in which it has heretofore been used, namely, for the purpose of furnishing the bees with food, not for storing in their cells, but for the purpose of making wax and stimulating the raising of brood, so that the swarm would be in a position to take the greatest advantage of the honey harvest. This malt extract is very useful to fill up the intervals between the several honey harvests, or to lengthen the harvest; also to aid late and weak swarms to complete the stores for wintering. As an inducement to building comb and rearing brood, a mixture of the malt extract is superior to pure honey, in that it arouses the activity of the bees sooner than the purer honey, and owing to the nitrogen it contains, compensates in a very great degree for pollen.

In autumn and winter, when the bees should

be kept quiet, it is necessary to feed pure honey alone, as any agitation, especially in the rearing of brood, will produce disastrous effects. In the absence of pure honey, candy-sugar placed in the hives in pieces is the best substitute.

The swarm must be strong and the candy placed at a convenient place, and the moisture of the hive sufficient to dissolve the candy. In wintering stocks the candy may be placed on the floor of the hive beneath the bees. On mild days the bees will know of the pieces of candy and store them in their cells.

The necessary moisture for dissolving the sugar-candy is found on that portion of the hive where the warm vapor condenses. It answers well to fill the cells of an old, firm comb with water, and placing the candy upon this, shove it into the hive below the combs. * * *

When there is a space above the combs, it is advantageous to place the candy in this space, directly over the bees. Should this honey-space be too large, so that the cluster of bees will not reach to the roof, the space must be lessened by filling with moss, and carefully guarded against mouldiness and moisture. It is necessary in autumn to have the doors and combs so arranged as to be able to open them without disturbing the swarm; this inspection should be made about every 14 days, to see that the supply of candy was not exhausted, and in a position convenient for the bees; that there was no danger from dampness; finally, to enable the bee-keeper to give such assistance as may be deemed necessary. During periods of severe cold, these examinations can be made in a warm room. DZIERZON.

Carlemarkt, December 20, 1871.

[For the American Bee Journal.]

Letters from Mr. Dadant.

Brig, (Switzerland), August 4, 1872.

DEAR FRIENDS:—I am going to cross the Simplon Mt. to-night, but as the wagons do not connect exactly, I was forced to remain here for a few hours, and I take this opportunity of writing to you. I will be to-morrow in Tallanza, Locarno and Bellinzona, and thence through Arona to Milan.

Switzerland is beautiful. How striking is this intermingling of the soil—ravines so deep that it takes hours of toil to scale the summit of an ordinary hill! I went out walking to warm myself, for it is cold here. I climbed on a hill and saw Brig at my feet, and right by my side a torrent rushing at the bottom of a ravine 150 feet deep. One step aside of the track would cause certain death. I understand the anxiety of their families when the mountain guides do not come back home on the appointed day

Pallanza, (Italy), August 5, 1872.

At Paris, I was warmly received by the editor of *La Culture Pollétique*. We visited together *L'abbé Sagot*, parson of *St. Ouen*, who was ex-

pecting me. After breakfast, during which meal we spoke of nothing but bees, M. Sagot showed me his apiary, which has been considerably reduced by his sickness, which rendered him unable to attend to them. His servant, who understood bee-culture very well, left him, and started an apiary in Picardy.

We afterwards went with M. Sagot to visit the parson of a neighboring village, *M. D'Hennery*, who is also a bee-keeper, and who had asked M. Sagot to bring me to his house. A hired carriage took us there in an hour. M. D'Hennery is young, and seems to be very intelligent. He commenced to keep bees four years ago, with Sagot hives, which he changed altogether to make hives *à la Langstroth*. His frames are 18 inches long, by 14 in height. He appeared very glad to see me, and although he said that he had once considered me as a bragger, he thanked me for the services that I rendered to the French bee-keepers, by making them acquainted with American bee-culture. "I followed your advice," said he; "I enlarged my hives, made large frames, and stimulated the laying of the queens; and I can affirm, with you, that some queens lay more than 3,000 eggs per day, during the good season. My 40 queens have not laid less than 2,200 to 2,500 eggs on average per day, during 30 days. But I have not succeeded as well as you in the results. Since I began to understand progressive bee-culture, I have obtained nothing worthy of notice. My best hive gave me 59 pounds of box honey. But this season is late and wet, and bees do nothing."

But while we were forgetting ourselves in our bee-talk, (although I had several times tried to take leave, and was always retarded by M. D'Hennery, who had offered us a bottle of fine old champagne), there was somebody in the next room who was grumbling at our interminable prattling. It was the maid servant of the parson, whose dinner was ready. It happened that the parson had some guests for dinner, and that, as we had refused to stay at dinner, and were still going on with our talk, the dinner was burning, and the servant growing impatient. But the parson was too much interested in the bee-hive to pay any attention to this, and he would have probably allowed his guests to dine without him had we been willing to keep on with our talk. "He will be scolded," said *L'abbé Sagot*, when we started back in our carriage, "for a parson's maid servant is always a tyrant."

I wished to visit Mrs. Ad. Jarrie, but she was not at home, and I had to leave without seeing this intelligent lady bee-keeper.

I paid a visit to my mortal enemy, (1) M. Hamet, but he was not at home. I only found his wife, and bought a copy of the paper without giving my name. M. Hamet's office con-

(1) M. Hamet, editor of *L'Agriculteur*, and supporter of immovable bee-culture, opposed to all progress in hive-making, is the adversary of M. Dadant, who brought to France the American ideas. He even refused to accept him as a subscriber to his paper, on account of M. Dadant's criticism; and the latter has to get it from one of M. Hamet's subscribers in France.

tains a library, in which I saw, among books and specimens of natural history, a large bellglass, two drinking glasses, and a large shell, all full of honey built there by the bees.

There is nothing extraordinary in that, since bees build their combs in anything that is given them, provided it is clean; but M. Hamet probably thinks that it is admirable.

CH. DADANT.

[For the American Bee Journal.]

Milan, (Italy), August 8, 1872.

MY DEAR FRIENDS:—As you have seen by my last letter, I arrived through southern Switzerland.

I saw the bees of Pallanza, of Bellinzona, of Como. I could have bought some at Bellinzona, but neither the bees nor the queens pleased me. The queens that I saw had some black rings instead of the leather color that we like, even when it is dark. One of the queens that was shown to me was so dark that she seemed to be exactly similar to a black queen. SARTORI says that there is some black blood mixed with the Italian on the frontiers of Italy.

At my arrival in Milan, I was received with exquisite courtesy by Count Barbo (1). We visited the Viscount of Saliceto (2) together. Both belong to the nobility, and live in sumptuous mansions, with all the luxury of high life. Then we visited Sartori. The establishment of Milan for bee-productions, tools, hives, &c, thrives rapidly under his direction. This association paid 20 per cent. to the shareholders this year.

Unhappily the bees are in poor condition this year in Italy. All the bee-keepers that I have seen told me that they were obliged to feed their bees on account of the want of honey. The like has never been seen before in this country. This scarcity of honey made me fear that I could not find as many queens as I wanted, on account of the mortality among the bees of careless bee-keepers.

Sartori told me that he could not furnish me with queens, not even 100, for the epoch that I had designated. He wanted 15 days more and an increase of price of 1fr. per queen. I consented to wait 15 days longer, and, thanks to Messrs. Barbo and Saliceto, he consented to furnish the queens for 5 francs. I granted him a week to inform me of the number that he can furnish.

The queens that Sartori showed me are all beautiful, but not bright in colors. They are of what we call the right color. The hives that I saw were well stocked, but without, or with very little honey. His bees are very mild; he opens all his hives without smoke, although they are destitute of honey, and they never seemed disposed to sting.

If I had not been very particular in taking nothing but yellow and young queens, I could have found the necessary quantity very easily; but a queen two years old has lost $\frac{2}{3}$ of her value,

(1) President of the Central Association of Bee-Culture for Italy.

(2) Editor of L'Apicoltore, Milan.

and since I am here I must make the best out of my situation. I was offered 100 or 150 queens by Chevalley, to be taken from his apiary and that of his associate, *Lafranchi*, but I would have had queens of all kinds, without guarantee of age or color. On the other hand, Sartori being very conscientious, I will get nothing from him but choice queens.

Every year the country bee-keepers sell their second swarms and old stocks, and preserve the first swarms. But this year the swarms have been scarce and the hives are light, so that nobody wants to sell on account of the small value of the hives. Besides, honey seems to be more abundant just now, and they want to keep their bees in the hope that they will gain something in weight. So you see that I am anchored in Italy for a whole month. Happily, Messrs. Barbo, Saliceto and Dubini, will help me to spend my time by showing me the city and the apiaries of the neighboring towns.

I will go, to-morrow, in Venice, to see Hruska. If his bees are of good quality I will buy a few of them, but I do not believe that they are better than here.

I stay at Sartori's, and take care of his bees while he is travelling to buy queens.

CH. DADANT.

Milan, August 16, 1872.

MY DEAR FRIENDS:—Sartori has been out in the country during the beginning of this week, hunting for queens for me. I already have 126 queens, the larger part of which came from the country. Sartori does not think that he can furnish me with more than 300 queens in all, on account of the still continuing lack of honey. In a village containing 70 hives in the spring, there is but one remaining. All the rest starved to death. Sartori's bees desert their hives constantly for want of honey.

Bee moths are very numerous here, on account of the well known carelessness of the Italian people.

Lombardy is, so far, the country where I saw the NICEST and MILDEST bees.

Every day I receive some visits. I have seen Countess Maroni, Count Carlo Borromeo, Count Castalani, Prof. Cornelia, the keeper of the Royal Palace of Milan, etc., etc. I will dine on Sunday with Dr. Dubini, and will go on Monday to visit the farms and apiaries of Viscount Saliceto. So you see that I am welcomed everywhere.

I have not visited Hruska yet. They say that he is often absent, so Count Barbo wrote to him to ask him what would be the most suitable day for him. When I go to see him, I shall probably visit a few apiaries in the neighborhood of Venice.

I saw the bees of Varese; they are no better than those of Mona, of Bellinzona. The keeper of the royal palace, who was born and raised in Turin, says that the bees of Piedmont are blacker and crosser than those of Milan. Count Castalani, who is from the vicinity of Naples, told me also, that the bees of Milan were more yellow

than those of the southern part of the peninsula. Besides, Sartori, who was born in the Tyrol, says that he does not understand why Uhle, who raises queens for sale, has established himself in the Tyrol, where the bees are as black and as cross as hybrids.

It is therefore not to be wondered at, if one of our best breeders, M. ——— calls Uhle an impostor, *in private*. Another American breeder, whom I know to be hard to satisfy, has ordered queens from Chevalley; he will certainly not like them.

I am now wondering why Mona wrote in an article in *Le Journal des Fermes*, that all the bees of the Italian peninsula were pure Italian, when he ought to have known that there were such enormous differences in their color and character.

Aug. 19.

The Italian climate is very agreeable; the nights are cool, though not cold enough to be chilly. The heat, during the day, does not exceed 26° or 28° centigrades (78° to 82°). We had a big storm that lasted two hours.

I pass my time in preparing honey and comb in the frames, and receiving visitors. I was visited yesterday by the wife of the keeper of the royal palace. She had been urged by her husband to come and see me. This lady, who is quite young and good looking, and speaks French very fluently, offered me a queen of her own raising. I accepted, and shall go after this queen the day before my departure. Here, it is impossible to understand the language of the working classes, who speak neither French nor Italian, but Milanese. Almost all well bred people speak French.

The Viscount of Saliceto did me the honor of inserting in the five Milan newspapers that the celebrated American bee-keeper, Ch. D., had arrived, etc., etc.

Milan is a nice city, an artistic city, a city of princes—and of paupers. The rag stands by the side of the silk handkerchief. How much I do prefer the American customs. Here, they call the noblemen by the title of "Excellence," and they kiss their hands. It is pitiful to see how the workmen lower themselves before wealth.

Everything is at a high price, except that which ought to be the dearest, "work." The salary of workmen is between 2⁰⁰c and 60c. per day.

CH. DADANT.

[For the American Bee Journal.]

Letter from Gnadenhutten, Ohio.

MR. EDITOR:—The harvest is past, and I have a little time to attend, if not to bees, at least to the editor of the Journal. Bee-keeping is almost a complete failure with us this summer, although we had plenty of white clover, regular showers of rain, and everything seemed favorable for the production of honey; but notwithstanding all these, we got neither swarms nor honey; but then we depend mostly on box honey, and as the bees

did not work in the boxes, we did not feel inclined to rob them of the stores in the hive, as we think they need it themselves in order to winter well. As we have very few basswood trees, or other honey-yielding flowers in this neighborhood, there is no chance for bees to gather honey after the white clover is past, and buckwheat is not to be depended on as a source of honey, and so we attribute our failure to the season. But when I received the August number of the Bee Journal, and saw Novice, (who lives only some sixty miles from me,) report in his letter nine and a half barrels of thick honey gathered this summer previous to the blooming of the basswood, with perhaps no better sources for honey than we have, it furnished food for reflection, and showed plainly the difference between the bee-keeper who understands the business and follows it, and the man who allows his bees to keep themselves; and almost persuaded me to become a bee-keeper myself. Although I have been keeping quite a number of bees for many years, yet I have never been a bee-keeper in the full acceptance of the term; for my time was taken up too much with other business to pay enough of attention to the bee business to make it successful.

SAMUEL LUETHE.

Gnadenhutten, Ohio, August 8, 1872.

[For the American Bee Journal.]

Cloth Honey Board.

In answer to the inquiry from Owen & Ladd, I will say what I know of the cloth honey boards after further trial. I find that mine have felled up somewhat, so that those which were just large enough to cover the frames are now rather small. Last year the bees covered every part that they could get at with propolis, without attempting to gnaw the cloth; but I find them a little inclined to pick at it this spring, if any part of it is exposed which was not previously covered with propolis. Perhaps the felling from being in the cellar last winter, has loosened up the fibre in a way that gives them a chance to pick at it. There is some trouble about putting it on. The bees are all over the frames, and if care is not taken some of them will not get out of the way. These are disadvantages.

Now, as to the advantages. Formerly, I always kept a cold chisel to pry off the honey board, and then I had hard work sometimes, as the bees glue down the board all around the outside and build comb between the tops of the frames and the board. The jarring of the hive as the honey board came up with a jerk, aggravated the bees; but now they scarcely notice the peeling up of the cloth. This filling up of the air space with comb was a chronic nuisance, for if you cleared it all off they immediately filled it up again, wasting enough wax to nearly fill a comb. I strongly advise every one who has a frame hive, to try at least one honey cloth, if it be but to take a single thickness of cloth, and then put on the board over it. If I ever get my hives filled up again so as to need new ones, I think I shall have the sides come just as high as the tops of the frames, then

have one thickness of cotton cloth large enough to cover the frames and also the top edges of the hive, and lay upon this two or three old newspapers tacked together. I hereby give Novice permission to try one without charge.

B. LUNDERER.

[For the American Bee Journal.]

Introducing Queens.

On page 96, vol. 7, of the American Bee Journal, I mentioned a plan on trial for introducing queens. It worked well and I cannot see any possibility of failure with it. If any one is about to receive a valuable queen which he wishes introduced without any risk, I think it will pay him to take the trouble to introduce in that way. The plan is simply this: Bore a two-inch auger hole in the bottom of a Langstroth hive, tack a piece of wire cloth over the hole on the inside of the hive, and another on the outside; put into it one or more frames containing only sealed brood, some of which is just gnawing out; be particular not to leave a single bee on the comb, put in the queen, close up the entrance bee-tight, and place the hive over a full colony with no intervening honey board. The heat from the full colony rises, and in five or six days the hive of the new queen may be removed and opened, or the entrance may be opened without removing.

I find the following entry in my last year's journal in regard to the queen thus introduced: She was received by mail, August 1st, and put into the hive in the afternoon, with her half-dozen attendants and a couple of frames of comb containing a small quantity of brood ready to hatch.

"August 4, a few eggs and quite a cluster of bees; August 6, young bees flew; August 7, bringing in pollen."

As to the bees flying when five days old, I think I could not be mistaken; moreover, Novice mentioned something of the same kind when bees were hatched without any old bees. I am somewhat inclined to think there may be some mistake about them bringing pollen at six days old, yet I can hardly see how there could be any.

I am having an up-hill time trying to increase my bees. I had two queens in movable frames with about bees enough for one, and four box-hives (bought this spring) and one Langstroth hive, with comb built crosswise, making in all, two weak swarms in frame hives, and five box-hives.

As yet I have got only one young queen to laying, and lost her by putting in an empty hive and setting in place of a full one without waiting for them to start queen cells. The season has been very backward and cold.

I place a box-hive in an empty frame hive, obliging the bees to go down through the frame hive, and then when the box-hive is removed, the bees take more kindly to the frame hive.

C. C. MILLER.

Marengo, Ill., June 19, 1872.

[For the American Bee Journal.]

My Failure.

MR. EDITOR:—As you solicit the success and failure of beekeepers throughout the country, I will send you my experience for the last year, although it is not very flattering or encouraging to any one. The past winter was a very hard one on bees, the worst one I ever knew or ever heard of since I have paid any attention to the keeping of bees. I lost two-thirds of my stock with what is called bee cholera or dysentery, and on an average, two-thirds of the bees in this county died of the same complaint. Bees are doing nothing here this season. They will not gather honey enough to winter on, unless things change decidedly from what they are now. There is basswood enough within half a mile of me for two hundred strong stocks to work on, and do a good business, but this year it was a total failure. The bees were killing drones all the time it was in bloom. I thought that basswood never failed of yielding plenty of honey, but it was a failure with us here this season.

Friend Gallup thinks that basswood will beat the world for honey. That is simply his opinion. I guess he would not think so if he and his bees were in this section of the country.

Many have assigned the cause and remedy for this bee malady. No cause that I ever have seen yet is at all satisfactory to me. Some claim that it was sour honey that killed the bees. I will admit that if there was sour honey in the hive, and they were obliged to eat it or starve, it would prove injurious. I examined hives that had not a particle of sour honey, it was as thick and solid as I ever saw. I would like to know what killed bees in such hives as that? I am afraid I am spinning my yarn too long about my failure with my bees. If it was about some great success or uncommon yield of honey, it would sound much better.

I have sent you a new subscriber. If every reader of the American Bee Journal would add even one new subscriber to its list, it would help the bee cause much.

D. MARSH.

Illinois, August 5, 1872.

[For the American Bee Journal.]

Notes from Northwestern Ohio.

Bees in this section of the State wintered so poorly last winter, that at least one-half perished mostly from the disease we call dysentery. Of those that survived, a majority were weak in the spring; and owing to the cool, backward spring they were yet weak on the first of June.

There was very little honey gathered until about the 25th of June, and then we had an abundant harvest until about the 10th of July, when the linden ceased to yield honey and all other flowers were dried up with the excessive drouth. Since July 10th, up to about the 10th of August, bees have not gathered enough to sustain them, but have had to go back upon their stores. One thing I notice, which to me appears uncommon,

i. e., notwithstanding the absence of honey in the fields, breeding has not slackened a particle, but seems to have increased rather, so that at this writing, I never saw colonies so absolutely crammed with brood. Is not this rather uncommon?

In June I attempted to queen a black colony by inserting a cell nearly matured (after removing the old queen of course), which hatched in about four days. The colony was in a box hive, and about the time the queen should commence laying, I transferred the colony to a movable frame hive, but could find no queen. In about three days, I again examined the colony, and found eggs in abundance, scattered all through the hive irregularly, but no queen was to be found. I made the most critical examination I was capable of, but could not discover from whence the eggs came. I then took a queen from a nucleus which had mated, but had not commenced laying, and placed her upon the alighting board and allowed her to run in, and, contrary to the experience of Hemme, she was kindly received as mistress of the colony. This might not have been, had I not introduced her after having had the bees out of the hive for at least half an hour hunting for the egg layer. The eggs were duly nursed by the bees, and, in due time, I had a fine lot of bastard black drones, a little larger than a worker bee.

Does a worker bee hatch in less than twenty-one days? It seems so.

On the 10th of July, in the morning, I took a swarm from a hive with the queen, and put them in a hive filled with empty combs, which had been setting in my stable since the bees died in it, last February, during which time there had not been a bee inside of it. I kept feeding this colony, owing to the scarcity of forage, and on the 29th of July, I examined the combs, and found young bees just emerging from the cells, while there were others which appeared to be twenty-four hours old. The queen I obtained from Grey & Winder, last fall.

Bees are now gathering honey quite freely, mostly from buckwheat. During the entire dearth of honey, bees gathered large quantities of pollen. From present indications, bees will be in much better condition for wintering this fall than for the two last.

One more winter like last, will make it easy to get subscribers for the Journal, as only readers of the Journal have been able to procure a particle of surplus honey this summer so far, or increase their stocks. At least this is the case so far as my observations extend.

J. E. RICHIE.

Lima, Allen Co., Ohio, Aug. 13, 1872.

[For the American Bee Journal]

DEAR JOURNAL:—We have had our hands and minds so full of bees and honey, and other matters too, for the past six months we could not find time to drop you a line, and then we read many better articles in our Journal than we can write ourselves; but a paper, like a good

pudding, is made up of many ingredients, and we are always willing, when able, to give our mite.

For several years past we have noticed the correspondence in the Journal, and reports from various quarters, of seasons, running thus: "Bees will not store enough this season to winter on." "The poorest honey harvest I ever knew." "No swarming this year, and but little surplus honey," and hundreds of other similar expressions which really appear strange to us, and we have not a poplar (tulip tree), linn or buckeye growing within five miles of our place. The seasons, for eight years past, since we have kept bees, (before that they kept themselves), have been like the toper's whiskey, none bad, but "all good, and some better."

My first swarm, this season, issued the 19th of April, and they have been swarming every week since, except the two first weeks in July, and strong stocks have been storing honey all the time.

If any one has learned how to keep the worms out of the boxes of honey in summer, without injuring the honey, after removing them from the hive, they have a wrinkle more than we have, and if they are at all communicative, we would be obliged if they would publish the plan. We have ineffectually tried for three seasons past, and failed and we won't tell you none of the *bad luck* we have had, and how we've been mortified, for folks would rather tell, as well as hear, of successes, and leave the reverses to be found out. Honey is made in this country, and a sight of it, but not fifty or more gallons to the hive, even if the hive were as big as a meeting house! but we have not a ready market at all times, and box honey being more preferable to the purchaser, and spring honey being nicer, better, and more saleable, the question not yet solved, at least in this climate, is how can we keep it clear of moths until winter? We could get double the number of pounds by extracting, but it will not sell, and what's the use of worrying and slinging and boiling to prevent fermentation, unless you can dispose of it.

Novice and Gallup have a heap of talk about the shallow chamber, the twin hive, and single stories, and frames in upper chambers, and all that, and one accusing the other of being muddy headed and can't see the point and understand. Now the fact is, there are some near-sighted thick skulls, in these parts, that haven't got the hang of that matter yet. There is a power of Gallup in all Gallup's articles, still, some are worth more than \$1.00.

We don't know how many eggs a queen can lay in a lifetime, or her capacity in any given time, or whether she will lay herself to death in a sixty frame hive, or not, but will venture the assertion, that if Gallup will move his big hive to this country, before his stock will store six hundred and fifty pounds of surplus honey, his queen and bees will have become like my friend, Pat. O'Gorman's knife.—O'Gorman cut hoop poles, and said he "had a knife that had worn out seven blades and three handles." H.

Murfreesboro, Tenn., Aug. 12, 1872.

[For the American Bee Journal.]

An Old Stock of Bees.

Campbell Wakefield, Esq., of Heyworth, Ill., has a stock of bees that has been in the same hive for twenty-nine years. He informs me that for fifteen years not a particle of comb has been removed, and that most of the comb has remained in the hive the whole twenty-nine years. The hive is the old-fashioned "gum," being nothing but a hollow log with crosspieces. I lately examined, with some care, the size of the bees. There were several stocks on the same bench. Some of these were but a year old. I am obliged to confess that the bees were fully as large as any in the apiary. The idea so frequently advanced, that bees in old combs are so much smaller than those in new, does not seem to hold good in this instance. *Is it ever true?*

E. A. GASTMAN.

Deatur, Ill., Aug. 10, 1872.

[For the American Bee Journal.]

Monarda Punctata.

Last spring I got some of the plants and planted in my garden, which is a heavy clay; it did very well, and bees worked on it readily. I sowed some of the seed in a rich, loose piece of ground. It is now most all in bloom, and is about a month later than the plants. The bees are working on it nicely now at this date; it looks as if it would continue till frost. I gave some of the seeds and plants to my neighboring bee men; it makes a fine show on the sandy land of one of the beekeepers, and the bees are on it all day. This man thinks it will pay to cultivate it for the bees alone, and he intends to go into its cultivation more extensively. I think one acre of it is sufficient for thirty swarms to store up for winter on, and the honey is the best I know of, even better than basswood or white clover.

My bees and those of my neighbors were reduced about half during the long winter, being too long confined; but I have now got them up to the old number and in good order. We had a very dry season. The honey season was closed about July 5th. I did not get half as much as I got last season. I would like to hear of some more good honey yielding plants that come into bloom the latter part of summer and last till frost. Does anybody know how the Rocky Mountain bee plant grows, and how cultivated? Let us know through the Bee Journal.

JAS. MCSAY.

Madison, Wis., Aug. 30, 1872.

[For the American Bee Journal.]

MR. EDITOR:—It has been about eight months since I have become acquainted with the American Bee Journal. I do not regret that I have become acquainted with it or the money that it cost, for in it I find a great amount of valuable

information, if I was able to bring it into practice. But with the rest of my brother bee keepers, I have met with a great loss of bees the past winter and spring. Last November, I had one hundred and twenty-three stocks of bees. I reduced them down to sixty-two colonies which I put into winter quarters, giving them double the amount of ventilation that I gave thirty-two colonies the winter before last. In January, I noticed that my bees were sick with the dysentery. What to do I did not know. The weather being so cold that I could not let them fly out until the 12th of March. At that time twelve colonies were dead. I concluded not to put them back. When the spring flowers began to bloom I had only twelve colonies left and they were in very poor condition. I have now thirty-three colonies, and have obtained about one hundred pounds of box honey. Perhaps I may obtain one hundred pounds more. It has been very dry in this part of Michigan this season. If my bees collect impure honey this autumn, will some one please inform me through the Bee Journal what to do in order that I may preserve the life of my bees?

E. R. WEIDMAN.

Grand Lodge, Mich., Aug. 26, 1872.

[Translated from Die Honeybiene.]

The Linden.

There is no tree of more interest to beekeepers than the Linden. How we rejoice at the unfolding of its leaves, and the appearance of the buds. With what interest we watch the swelling of the buds and then the opening of the first flowers. Then comes the golden harvest for our favorites. The happy buzzing of the bees among the leaves grows stronger and stronger from day to day, till at last when the blossoms send forth their exhalations far and wide, we with rapture hear their humming, sounding like the noise of a distant waterfall.

But not alone when in blossom does this noble tree yield food for the bees; but for three or four weeks before, there distils from the leaves a sweet juice which the industrious workers quickly transfer to the hives. The following are the various species of Linden.

1. *TILIA PARVEFOLIA HYLRIDA*, having large leaves, blossoming about the middle of June. In 1865, the first blossoms appeared on the 6th of June. When in full bloom this is the first to receive the attention of the bees.

2. *TILIA PARVEFOLIA*, has leaves nearly as large as the foregoing species. Comes into bloom from six to eight days later, and is much visited by the bees yet no species is so much valued as

3. *TILIA EUROPEA*, which has small leaves and flowers, which latter appear in large clusters. It is the most cherished of all the species of Linden, and the rush of bees for its sweet nourishment is wonderful. It blossoms from three to six days later than the second species.

4. *TILIA OCCIDENTALIS*, has small dark leaves, and often covered all over with blossoms which are however not visited so eagerly as the blos-

soms of the EUROPEA. It blossoms some eight to ten days later than the EUROPEA. A somewhat less visited variety called winter linden, blossoms from three to six days later.

5. *TILIA GRANDEFLORA*, has large leaves, and is not so full of blossoms as the other species.

6. *TILIA ARGENTEA*, silver linden with short stalked leaves, with a silvery white underservice, with thick stemmed fleshy flowers, which open some six days later than the winter linden, but are much visited by the bees. This species has been but recently introduced here, and hence we have no old trees.

7. *TILIA LAXIFLORA*, has very large leaves, and its blossoms borne on long branches open some days after those of the silver linden. They are very scarce here, but are visited by the bees. In Fredricksfield park I first saw them.

Between those above mentioned species are many others, as for example; the rose linden, whose leaves have a redish tinge, and also a species lately brought from Bosnia, and some American species.

[For the American Bee Journal.]

Summer Report.

Bees have done very poorly so far the present season. But little honey has been gathered and that of a very inferior quality. It is dark, thick and of disagreeable flavor. About equal to third rate molasses. I have been ashamed to offer mine for sale lest people might think I had been feeding a very poor quality of molasses. Swarms were quite numerous. Many of these will not make honey enough to carry them through the winter, unless the fall yield should greatly exceed that of the spring and summer.

The moth seems to be making unusual ravages the past few weeks. Weak stocks are the sufferers.

E. A. GASTMAN.

Decatur, Ill., August 10, 1872.

[For the American Bee Journal.]

Sugar Syrup.

MR. EDITOR:—We cannot refrain from making some remarks on the last article of Novice, September No., page 50. It is very evident from his remarks on making sugar syrup for wintering bees, that his experience has been quite limited.

Until about eight years ago, the greater part of our life was spent in the confectionery business, and we think we understand the nature of sugar. We have kept bees over twenty years, and have experimented in many ways in feeding sugar syrup. Some years ago we got it into our head that we might make it profitable to make syrup to imitate the different kinds of honey, and have the bees store it in boxes in beautiful white combs for the market. But alas, we failed. The margin was over the left.

Several times in the past fifteen years we have wintered our bees on sugar syrup, not because

at that time we considered it better than honey, but for the reason that the bees did not store any honey, the seasons being wet and cold. We also noticed that in the Spring the feces on the snow were so small in proportion to what we had usually seen, that it puzzled us a little to understand it, and probably we might not have to this day, had not Novice solved the problem.

Now Mr. Editor, we will examine a little into the nature of sugar. Probably but few people are aware that there is a great difference in the strength of the grain of sugar, even the same brand and made at the same factory. Now this strong grained sugar will require more water and longer boiling to destroy the grain, and also more acid.

But we are opposed to the use of cream of tartar to any considerable extent, as we fully believe it to be injurious to the bees. If acid must be used, we recommend half a tumblerfull of sharp cider vinegar to every ten pounds of sugar.

We also contend that good sugar syrup fit for wintering, cannot be made without boiling.

We will quote Novice's own words. "We feel quite sure that no boiling is necessary."

Now friend Novice please pardon us, but here we must differ. Take a frame of honey candied and introduce it into a full swarm, and how long will it take before it will be reduced to the liquid state. We have never tested the set time, but are confident it will not be more than three or four days.

We will now give a strong swarm a frame filled with syrup made Novice fashion, by pouring boiling water on it, two and a half gallons to fifty pounds of sugar, and ten teaspoonsfull of cream of tartar, this to be thoroughly stirred till well mixed.

How different from the candied honey that requires heat to reduce it.

But the sugar syrup we said before made after Novice's plan will crystalize in a very short time. The more heat the hive contains, the quicker will it crystalize. For example, many of the articles of confectionery after boiling, such as rock candy, and many more kinds after they are prepared, are put into tight dark cupboards, with a temperature of eighty degrees, and they are crystalized in from five to seven days. We do not think it would crystalize so quick in the hive, it would take some time longer; but after it takes this change, the bees might as well have their combs filled with plugs of wood, for it is a great deal harder than it was before melting.

We speak positively because we know only a few winters ago we committed this very error, and two or three swarms had several combs filled with this crystalized sugar, and several weeks before the bees could clean it all out, it was about as hard as stone.

Pains should be taken to make this syrup as near the consistency of first class honey as possible, and we contend that it cannot be done without boiling. First, you cannot melt the grain of fifty pounds of sugar with two and a half gallons of boiling water. You must dissolve the grain of the sugar before the acid will

take effect. The water dissolves the grain and the acid prevents their formation again.

Now, friend Novice take your tub, put in your fifty pounds of sugar, and the two and a half gallons of boiling water. Make a paddle and roll up your sleeves, and stir this mixture two and a half hours by the town clock. Now take out your paddle and rub your fingers up and down the paddle, and if you do not find any quantity of grains on the paddle, I shall be much mistaken, and will forever afterwards hold my peace.

Now to make syrup according to my experience boiling is absolutely necessary. The sugar should be boiled slow so as to destroy the grain of the sugar, without using cream of tartar, but vinegar in its stead, and at least just double the amount of water that Novice recommends, and soft water at that if it can be had.

To those contemplating feeding syrup, I would say that the same old rule will hold good in this case as well in others, viz.: Haste makes waste, or in other words, make haste slowly.

For the benefit of those who wish to feed syrup, we give the mode in which we make it. To twenty five pounds of coffee sugar, two and a half gallons of rain water, one-half tumbler of cider vinegar to every ten pounds of sugar. Boil slow with cover on the kettle to keep in the steam. When you think it is about the proper consistency dip out a little in a saucer, and let it cool and you will then be able to judge if it is right. If you should afterwards find it disposed to grain a little, add a little water and cook again.

Dronings.

I find that my modest title has called forth some rather captious criticisms, but as it was assumed unaffectedly, and in deprecation of that *snarling* style which unfortunately too much prevails in our peculiar community, I shall still adhere to it—

1. There is one primary and most important point upon which I (in common, I presume, with all inexperienced bee-keepers), need full and accurate teaching, viz.: How to have the combs built straight, so that the frames can be readily removed from the hive, whether for extractor or any of the manifold manipulations of the apiary. In nine cases out of ten I find that my bees, (apparently as unscientific as myself), will, in spite of all my precautions, build *across*, instead of *vertically* in the frames. This, of course, renders removal utterly impossible, and virtually makes it a box-hive. NOVICE says that he has all his combs built between straight combs, but if the *young* novice has no straight combs to offer as a model, what then? Comb-guides, I find, are by no means infallible; and I do hope that our leading apiarians, (such as Novice, Gallup, Marvin, &c.), will each give us a lesson on this truly important point, for without it we shall be tempted to abandon the movable frames ("so-called") in despair. The importance of this point must be my apology for referring to it again so soon.

2. It is time that some conclusion had been reached as to the *very best* plan for *introducing queens*. The great trouble with the novice is to *find the old queen*. Gallup advises that a queen shall be given to young bees exclusively. If this plan is fully endorsed, it will greatly simplify the process, for it will dispense with the main trouble, that of finding the old queen. I refer to his article in the June (1871) No., p. 288, commenting on Griinnis' efforts to give queens to old bees.

3 I can testify that Mr Butler's plan of uniting swarms is not only practicable, but advantageous. I tried in seven or eight instances this summer, and, (with one exception), it answered admirably. I also had two swarms to unite voluntarily. Not caring, of course, to separate them, although either would have constituted a large colony. I put them in an unusually big hive, (somewhat after Alley's style), and in exactly one month from the day they were hived, they had, (besides filling their own special compartment), made me at least forty-five pounds of surplus honey; but I was not greedy enough to take it all from them. B.

[For the American Bee Journal.

An Inquiry.

What do queen raisers do with the old queen when they remove her and allow the stock to build cells? Do they always run the risk of introducing her to a strange colony? I have built a nucleus by taking the frame and adhering bees upon which I found the queen, and putting them into a new hive; also, put one or two frames from other hives, set this in the place of the hive from which the queen was taken, move queenless stock a few feet from the old stand. After the cells have been built and removed, gradually bring the hives together, and unite them by putting the combs into the hive with the queen. I have never lost a queen, but would like to know whether it is the best plan. Won't queen raisers tell me? E. A. GASTMAN.

Decatur, Ill.

A Correction.

MR. EDITOR:—Allow me to correct a few mistakes in the printing of my article on "The utility of Drones," page 63, line 11. Read: "During the harvesting season, therefore, it will contain *fifty-five thousand* (55,000) workers and 3200 drones." Further: "Then with no more trouble and no more cost, we will raise five thousand (5000) workers instead of 3200 drones."

Further: "If (55,000) *fifty-five thousand* workers gather 50 pounds of honey, (60,000) *sixty thousand* will gather 54 6-11 pounds; gain will be 4 6-11 pounds, etc., etc., etc."

Yours, &c.,

C. P. DADANT.

THE AMERICAN BEE JOURNAL.

Washington, October, 1872.

All communications and letters of business should be addressed to

GEO. S. WAGNER,
Office of the American Bee Journal,
WASHINGTON, D. C.

With the present number we present to our readers a large number of excellent articles on wintering bees. We trust they will prove a help, and prevent the great loss which bee-keepers suffered last winter.

When my father read to Mr. Langstroth the article upon the Bienenzeitung, printed in last month's Journal, entitled, "My Uncapping Instrument," Mr. L. suggested as an improvement over the use of hot water, plugs of soap stone, so made as to be inserted into the body of the instrument, in the same way as those used by tailors. The heat retaining qualities of the soap stone, would enable the beekeeper to use the iron for a long time, without any change.

At the recent celebration of the 400th anniversary of the University of Munich, Dyerzon received from the Faculty the title of Doctor of Philosophy, in recognition of his eminent services in the advancement of Apian Science.

Prof. T. C. Porter, of Lafayette College, Easton, Pa., writes us that the plant which was sent to us from Red Hill, Albemarle Co. Va., was the *Melilotus Alba*, L. White Melilot, Sweet Clover. "It is sometimes cultivated in gardens, and is occasionally found spontaneous in their neighborhood."

He further states concerning the pollen alluded to in the article of "Miller and his Wife, and their troubles," published in last month's Journal. "He is right about the pollen masses of the *Aselepias*. In the portion you sent me, they are very numerous, and can be readily made out with a lens of ordinary power."

We would be much obliged to those of our subscribers who are in arrears, if they would send in their remittances during the coming month. The safest way to send will be through a Post Office order.

At the request of Mr. Langstroth, we insert the following: Mr. Editor, please publish in the American Bee Journal, the following facts.

1. Before starting for Washington City, in January last, I purchased a double accident ticket of the agent of the "Railway Passengers' Assurance Company." The time covered by this ticket, for which I paid one dollar, was forty-eight hours, and the sum guaranteed was \$6,000 in case of fatal injury, or \$30

per week for injury causing total disability from business. On reaching Washington, my foot was run over by the wheel of a street car, and I have been totally disabled from my business for twenty-one weeks. I have found the company very courteous and obliging, and they have promptly discharged their obligations in my case. I desire cordially to recommend this company to the patronage of the traveling public. A single ticket, covering twenty-four hours, for twenty-five cents, guarantees \$3,000 in case of fatal injury, or \$15 per week, while totally disabled from business.

L. L. L.

[For the American Bee Journal]

Wintering Bees.

The winter of 1872 will be remembered by the bee-keepers as one of the most disastrous experienced. The causes of the loss of so many bees is well understood, or is supposed to be, namely: the large amount of honey dew gathered by the bees in the fall of 1871. This honey was stored in the cells and sealed, and did not sour, but it had a tendency to physic the bees, and caused dysentery. The only remedy for the disease, (if disease it can be called), was weather warm enough for the bees to fly out as often as once in two weeks. Apiaries protected from the cold north winds by buildings, fences, and even those situated in valleys where the bees could fly out in the middle of the day as often as stated above, came through safe and in good condition. Bees that were put in cellars wintered badly or perished. Many hives that were taken out alive in the spring, soon died. Their abdomens were extended to their fullest capacity, but they made no attempt to fly, even when the weather was warm; they seemed to understand that they could not raise their bodies from the hive. These stocks soon dwindled away, leaving plenty of honey in the hives. The only sure remedy is to remove the honey from the hives in the fall, and feed syrup made of granulated sugar. I have used this kind of feed for 15 years, and speak from experience. I do not guess that they will live upon it, but I know that this kind of food is much better than honey gathered late in the fall. I put about two quarts and one pint of water with six pounds of sugar; boil a few minutes; when cold, give it to the bees. Most any beekeeper can devise a way for feeding his bees. All that is needed is to have a box, say one that will hold a quart; make it tight as possible with nails; then run some hot melted beeswax in the corners on the inside; make a float to fit inside the feeder, and small enough to allow for swelling, so that it will rise and fall as the feed is put in and removed. This feeder can be used with or without a cover. Glass is best for a cover when any is used. Fill it early in the morning or just before dark, at night.

I don't think it pays to feed new swarms unless they have the hive one-half or two-thirds full of comb. Old stocks, that have their hives full of comb and but little honey, should be fed.

For the past few days bees have gathered honey rapidly here, and many stocks that I had made up my mind to feed, will winter without feeding.

We are looking for a good season next year. We have had plenty of rain during the summer, and white clover will be abundant. Have sent out 650 queens this season, and never had better luck in raising them. H. ALLEY.

Wenham, Mass., September 16. 1872.

[For the American Bee Journal.]

The September Journal.

We were much pleased to know that friend Dadant has reached Europe in good health, without meeting any accident to mar the pleasure of his journey.

We do most earnestly hope that he may be successful in his endeavors to procure and safely bring to our shores, a large number of choice Italian queens. Believing, as we firmly do, that the Italian bee, in its purity, is far greatly superior in almost every respect, to our native black bees, we can fully appreciate the great benefit that will result from the success of the undertaking. Again, we recognize the need of a new importation of pure queens, selected by a good judge of pure Italian bees, from the fact that it is with the greatest difficulty that we are able to procure pure queens.

Is it possible that Novice has turned his attention to the bee-hive business, and set his wits at work to invent a "new hive?" So it seems, and then it duly takes three columns of the Journal to describe its simple features; another proof that those things which are the simplest and most readily understood when seen, are not always the easiest to fully describe. But we see that Novice has invented a new wholesale bee-feeder, which is making quite a sensation in the apiarian world. A few days ago, we received a letter from a prominent New York beekeeper, who asked: "How do you like Novice's new bee-feeder? Is he not going to extremes?" Well, perhaps so; but we hope it may be only to prove a benefit to those of us who move more slowly.

Do not be afraid, friend Novice, that your articles will get too long; we always read them the first thing after cutting and sewing the Journal; and very many of our readers no doubt do the same.

Sorry to learn that our friend, the Miller, (who is not a moth-miller), has had so much trouble. The best way to keep clear of the bees when running the honey slinger, in our opinion, is to make a small frame large enough to operate in, and cover it with mosquito netting. Place it in the shade of some tree, convenient to the apiary. Of course it must have a close fitting door on one side. We see that many who use the Mel-extractor, claim they can run the machine anywhere without being annoyed by the bees. But we cannot; perhaps our bees possess a better taste for stolen sweets than those of others.

The articles which friend Gallup mentions as possessing real merit, are, we doubt not, of practical value. We, too, are using some things

which we like very much. Gray & Winder's new safe queen cages have given us the greatest satisfaction. Since we last wrote you, we have procured one of their new honey extractors—the No. 1 machine—and having tested it quite thoroughly, we must say that it suits us first-rate. It requires but very little labor to turn it, starting and stopping easily; does its work as thoroughly as any; and by using a simple device which we add, will not injure newly made combs. Moreover, it can be easily cleaned, and when not in use, protected from flies, dust, &c.

The Beebe-feeder, we find to be just the very best thing of the kind we have ever tried; especially is it valuable for stimulating the rearing of brood, and this is the principal use we make of any bee feeder. If we wish to feed and have it stored in the combs, the quickest, easiest and surest method is, we think, to pour the food directly in the combs.

And, then, there is one thing that has puzzled many others as well as ourselves, and that is a good bee hive. After trying many of the best ones that were patented, we went to work to see if we could not remedy some of the difficulties that lay in our path. We wanted to use but one style or size of frame, but those we used did not suit us. We wanted our frames so arranged that they could not get out of place nor swing and slide about when transporting bees or honey to market. We did not like the space around the frames, nor the facilities given the bees to glue and wax themselves fast. We also found that in order to accomplish the easy and rapid handling of the frames, they must admit of removal without being lifted out of the top of the hive. After having devised a plan that would surmount all these difficulties, we found that "our hive" was subject to the patent of Mr. J. M. Beebe, whose hive was accidentally brought to our notice. We have since adopted his improved hive, having modified it to suit our own notions, and now have a hive that is as much ahead of Novice's latest, (we have used hives just like his, except the entrance), as his is better than the old box or gum, at least so we think and many others say.

We have used Novice's honey knife, which answers our purpose the best of any we have tried. No hot water is required, and it does its work well. But we think that Mr. Heller's method will be found much the best.

Dr. Jewell Davis' queen nursery we like very much, as it enables us to keep on hand a supply of extra queens, the value of which is well known.

We wish we could say as much of the fertilizing attachment. Has any one succeeded with it? If so, will they please report.

We cannot agree with Herr Schonfelds' "Theory of Wintering," as translated from the *Bienenzeitung*. His fears of the danger of extremes of heat and cold are, in our climate, groundless. If bees are to be wintered in a cold atmosphere, they must be strong in numbers and kept well ventilated, to prevent the accumulation of frost in the hive. Several years ago, while residing in western New York, one of our neighbors, by way of experiment, set an old box hive, which had a large crack, some three inches

wide, extending from top to bottom, upon a bench about two feet from the ground, with the open side exposed to the west, where it received the full benefit of the Hyperborean blasts of Lake Erie; yet it came out in the spring in good condition.

If cold will kill bees, why did not they perish? If bees are wintered in a special repository they must not be too strong in numbers. One quart of young bees is amply sufficient. We agree exactly with Mr. Dadant's views of the "Utility of Drones." Why breed a horde of useless consumers? By rearing them from choice queens in one or two hives only, we will get better stock where queens are fertilized in the open air. Not wishing to weary you, Mr. Editor, with our desultory remarks, we close for the present.

HERBERT A. BURCH.

South Haven, Mich.

[For Wagner's American Bee Journal.]

Uncapping Combs.

MR. EDITOR:—On page 67 of your September number, I see an article on the subject of uncapping honey by heat. As we have made some experiments in this direction, this article determines us to give them now. In June or July, 1871, we tried a plan similar to Mr. Heller's, except that we used a thick knife properly heated, but never could get it to work satisfactorily; the wax would not float in the honey, as it appears to have done for Mr. Heller, but would run and close a large portion of the cells with thick drops of wax. We infer Mr. H. placed his combs in a horizontal position. This would be too inconvenient, besides we do not think anything would be gained over the usual method.

We next tried placing cloth over the face of the comb, applying a heated iron cylinder on the outside of the cloth, lifting the latter as fast as the roller passed over it, the object being for the cloth to absorb the wax as fast as we melted, and thus removing the caps adhering to it. This, too, proved unsatisfactory, sometimes producing tearing work. Yet we are not sure if we had no better plan, it might succeed, in careful hands, but we think we have a better. By taking a common tea kettle, containing a small quantity of water, and placing it over a brisk fire until a strong jet of steam was thrown out, then taking a frame by the shoulders, in the same position in which it was placed in the hive, and holding it before the jet, allowing the steam to touch, first, the upper part of the comb, and raising the comb as fast as the wax ran off clear of the cells, we soon found a strip, about 2½ inches wide, from the top of the comb to the bottom, beautifully cleared of cappings, every cell remaining well defined and uninjured; but the wax would form in solid streaks on each side of the uncapped portion, and to apply heat sufficient to remelt it would injure the cells around it, and if we attempted to move the frame from right to left at the same time we lifted it upwards, to keep the wax flowing from above downwards, we found that while the jet was

moving over the comb, the wax would cool so rapidly while the frame was being moved, it would be hard before the steam could be applied to it. In short, the jet of steam was not broad enough to keep the entire width of the comb melted at once, and once hardened in thick cords, it could not be again melted without injury to the combs, though we thus uncapped a great many combs by it, in strips from top to bottom, and removing the cords of wax between them with a knife. We finally devised a machine that will, we think, perfectly accomplish the object.

Have a cylinder or tube of tin about one and a half inches in diameter, and as long as your frames are. On one side of this have a row of very small holes punched in a straight line from one end to the other and close together; now have the ends of the tube securely closed and a hole one inch in diameter cut out of the under side in the center; this is to receive a small tin tube about one foot long, the other end to be inserted so as to fit tightly into a tin lid made to fit the top of a tea kettle or other suitable vessel, the spout of which (if it has one) must be closed. All being secure and water in our kettle, a brisk fire is all that is needed to give us a broad sheet of steam, extending horizontally, as wide as our frame. We have only to take a frame to be uncapped, place it pretty close to the row of holes in the cylinder, beginning at the top of the frame, slowly raise the frame as fast as the wax melts and flows downward, when the entire capping will run off the bottom of our frame melted wax.

It was too late last season before we devised this implement, and having, this season, to remove our apiary from Mobile to this place, we have had no opportunity to thoroughly test it, but we uncapped so many combs successfully with nothing but our tea kettle, that we feel confident it will succeed under all circumstances.

We had not intended to communicate our discovery until we had thoroughly tested and perfected it, but the communication in your September number has determined us to give it now, lest the hint there given might lead some genius to see the "point," and the Patent Office be besieged for a patent, and we only wish we were genius enough to invent all the improvements in apiarian fixtures, we feel quite sure that department of the Patent Office would have a long rest.

J. M. WORDEN.

Oxford, Calhoun Co., Alabama.

In order to defend themselves from cold during winter, they crowd about the middle of the hive as near to each other as they can be in the space that is between two combs. There they stir themselves from time to time, without change of place, and this motion excites a warmth that protects them from external cold. The heat is so great by this agitation, that it is communicated to the glass windows of the hive, where it is very sensible to the hand that is applied.

It is probable that they succeed one another by turns in laboring, because they work night

and day in the hive, and there is a part of the bees that repose themselves even in the day time.

Virgil on the contrary, following Aristotle, says Omnibus una quies operum labor omnibus unus. All work together, all together rest.

WILLMAN.

[Translated from Die Honigbiene.]

Is there such a thing as mutiny among bees? I gave my neighbor a young swarm. The young queen showed herself to be unusually fruitful, and the stock increased in numbers so rapidly that it was expected shortly to cast off a swarm.

One day there was great excitement in the hive. The bees were running over the glass door, acting as though they had lost their queen, yet at the entrance all was quiet, the bees flying in and out as usual. Such was the message brought me about noon. In the evening I opened the hive and found over half the bees dead, or nearly dead. What had happened here? Did one part of the bees want to swarm, and were they by violence prevented by those unwilling?

[Translated from Die Honigbiene.]

Rheumatism and Bee-stings.

Mrs. ———, had for several years been a suffer from Rheumatism. She could find no remedy, until luckily one day she found a notice in a newspaper that the sting of a bee was an excellent remedy for her complaint. She immediately asked her husband to bring her some bees, that she might try it. This was in winter during a season of more than ordinary cold.

He went to the garden and rapped upon the side of one of his hives until the bees appeared, when he seized a number and brought them to his wife. The sting helped for a time, but at the expiration of eight days the pain returned again, and again stings were applied with temporary relief. This remedy was applied repeatedly during the winter, sometimes two, sometimes three bees being applied at the same time. When spring came both rheumatism and bees were gone, the latter doubtless owing to their being so often disturbed during the winter.

Dysentery.

From Leidfaden zur Bien ngeucht.

WM. A. SEMLITSCH.

Dysentery in spring, readily attacks weak swarms, that have had new combs to winter upon, which are much colder than old ones, and which few bees cannot properly warm. Watery or otherwise bad honey is also a fruitful cause of disease. Weak swarms should never be wintered with new combs; the well filled combs are preserved in a dry place, and no honey is purchased unless from a trustworthy beekeeper. Bees sick with dysentery should be fed with pure honey, the soiled combs are cut out, the space of the hive narrowed, and the bees kept warm.

Bees are doing well here. I have over one hundred swarms, and have taken over one hundred pounds apiece from some of them. I like the Journal very much, especially Novice letters.

Yours truly,

C. W. STOKES.

Atchinson, Kan., Aug 24, 1872.

[For the American Bee Journal.]

I want to ask Novice some questions about his hive.

1st. In opening the entrance would there not be an opening behind if the bottom was the same size as the hive?

2d. Is there not too much space between the frames and the bottom? Two inches, I think, is too much, for the bees would join the frames with it.

I would like to try your hive, for you have hit on the very plan I was trying to get at, but could not succeed.

C. E. WIDENER.

Cumberland, Md., Sept. 7th, 1872.

[For the American Bee Journal.]

Central Illinois.

MR. EDITOR:—I stimulated my bees by feeding early and continuously (as they were weak early in spring) until they grew strong and could find flowers to procure honey from; they increased rapidly in numbers, but the result in honey has been poor. Took less than one barrel of extracted honey, and have but little in box that is capped. The white clover and linden season did not afford the usual amount. I might say they failed in every point up to the present writing. I have plenty of bees, if they had the pasturage to make honey from. The first part of the season was fair, but of late we have had more rain than is useful; nay, I may say so much rain, that all the sweetness so far, is washed out of the flowers.

L.

Peoria, Ill., Aug. 16, 1872.

Last fall I had one hundred and ten swarms, mostly in L. L. Langstroth's hives. At the commencement of the present honey season, had but thirty-five; they increased (mostly by artificial swarming) to forty-seven. I think I am safe in saying that they have not made four hundred pounds surplus honey. We have plenty of rain.

WILLIAM TROYER.

Anaman, Henry Co. Ill., Aug. 23, 1872.

The season of 1872 has been the worst one for bees in this section of country that I have witnessed since I commenced bee-keeping. Last winter a great number of bees perished; I lost twelve stocks. The honey was gathered in the fall and was rather thin. I suppose that this, in connection with their being confined for a long time in their hives, caused the dysentery; but I am not discouraged, and hope, with the aid of the American Bee Journal, to soon make up my loss.

JEREMIAH PICKERING.

Brampton, Ont., Canada.